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☐ 1. Document ID: US 6310431 B1

L4: Entry 1 of 7 File: USPT Oct 30, 2001

US-PAT-NO: 6310431
DOCUMENT-IDENTIFIER: US 6310431 B1

TITLE: Annealed carbon soot field emitters and field emitter cathodes made therefrom

DATE-ISSUED: October 30, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Blanchet-Fincher; Graciela Beatriz	Greenville	DE		
Holstein; William Leo	Wilmington	DE		
Shah; Syed Ismat Ullah	Wilmington	DE		
Subramoney; Shekhar	Hockessin	DE		

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
E. I. du Pont de Nemours and Company	Wilmington	DE			02

APPL-NO: 9/ 068483
DATE FILED: May 12, 1998

PARENT-CASE:
CROSS-REFERENCE TO RELATED APPLICATIONS This application claims the benefit of continuation of U.S. Provisional Application 60/006,776, filed Nov. 15, 1995 and PCT International Application PCT/US96/18146, filed Nov. 13, 1996, wherein the United States was a designated country.

PCT-DATA:

APPL-NO	DATE-FILED	PUB-NO	PUB-DATE	371-DATE	102(E)-DATE
PCT/US96/18146	November 13, 1996	WO97/18575	May 22, 1997	May 12, 1998	May 12, 1998

INT-CL: [7] H01 J 1/30

US-CL-ISSUED: 313/311; 313/310, 313/346R
US-CL-CURRENT: 313/311; 313/310, 313/346R

FIELD-OF-SEARCH: 313/311, 313/310, 313/346R, 313/495

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

O	ISSUE-DATE	PATENTEE-NAME	US-CL
99	August 1989	Spindt et al.	313/495
912	May 1991	Spindt et al.	313/495
918	April 1993	Kumar	445/50
4573	August 1999	Mearini et al.	445/50

FOREIGN PATENT DOCUMENTS

OREIGN-PAT-NO	PUBN-DATE	COUNTRY	US-CL
1 05 768 A1	August 1995	DEX	
O 94 15350	July 1994	WOX	
O 94 15352	July 1994	WOX	
WO 94 28571	December 1994	WOX	
WO 95 22169	August 1995	WOX	
WO 97 18577	May 1997	WOX	

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) Urgate, High-Temperature Behaviour of "Fullerene Black", Carbon, vol. 32, No. 7, 1245-1248, Dec. 1994.
! S. Basca et al., Raman Spectroscopy of Closed-Shell Carbon Particles, Chemical hysics Letters, vol. 211, Nos. 4, 5, 346-352, Aug. 20, 1993.
L A. Chernozatonskii, et al., Electron Field Emission From Nanofilament Carbon Films, Chemical Physics Letters, 233, 63-68, Feb. 3, 1995.
Chernozatonskii et al., Nanotube Carbon Structure Tips--A Source of High Field Emission of Electrons, Mat. Res. Soc. Symp. Proc., 359, 99-104, Dec. 1995.
B H. Fishbine et al., Buckytube Cold Field Emitter Array Cathode Experiments, Mat. Res. Soc. Symp. Proc., 359, 93-98, Dec. 1995.
Walt A. de Heer et al., Carbon Onions Produced By Heat Treatment of Carbon Soot and Their Relation To The 217.5 nm Interstellar Absorption Feature, Chemical Physics Letters, 207, 480-486, May 28, 1993.
Kratschmer et al., Solid C60: A New Form of Carbon, Nature, vol. 347, 354-358, Sep. 27, 1990.
Davanloo et al., Laser Plasma Diamond, J. Mater. Res., vol. 5, No. 11, 2398-2404, Nov., 1990.

ART-UNIT: 285
PRIMARY-EXAMINER: Patel; Ashok

ABSTRACT:

Annealed carbon soot is useful as an electron field emitter. Field emitting cathodes made up of annealed carbon soot attached to the surface of a substrate are also provided. The field emitters and field emitter cathodes are useful in vacuum electronic devices, flat panel computer and television displays, emission gate amplifiers, klystrons and lighting devices.

11 Claims, 11 Drawing figures

☐ 2. Document ID: US 6136156 A

L4: Entry 2 of 7 File: USPT Oct 24, 2000

US-PAT-NO: 6136156
DOCUMENT-IDENTIFIER: US 6136156 A

TITLE: Nanoparticles of silicon oxide alloys

DATE-ISSUED: October 24, 2000

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
El-Shall; Mohamed Samy Sayed	Richmond	VA		
Graiver; Daniel	Midland	MI		
Pernisz; Udo C.	Midland	MI		

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Virginia Commonwealth University	Richmond	VA			02

APPL-NO: 8/ 813626
DATE FILED: July 14, 1997

PARENT-CASE:
CROSS-REFERENCE TO RELATED APPLICATIONS This is a divisional of application(s) Ser. No. 08/606,456 filed on Mar. 1, 1996, pending. We described "Silica Nanoparticles" in our first prior copending application U.S. Ser. No. 08/398,268, filed Mar. 3, 1995, now U.S. Pat. No. 5,580,655. We described "Silicon Nanoparticles" in our second prior copending application U.S. Ser. No. 08/561,771, filed Nov. 22, 1995, now U.S. Pat. No. 5,695,617. Our present application, however, concerns nanoparticles of silicon oxide alloys, and not nanoparticles of silica or silicon.

INT-CL: [7] C01 B 33/00

US-CL-ISSUED: 204/157.41; 204/157.45, 204/157.51
US-CL-CURRENT: 204/157.41; 204/157.45, 204/157.51

FIELD-OF-SEARCH: 204/157.41, 204/157.45, 204/157.5, 204/157.51, 423/326, 423/327.1, 427/596, 427/597

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
5168097	December 1992	Araya et al.	
5254832	October 1993	Gartner et al.	219/121.66
5580655	December 1996	El-Shall et al.	428/402
5593742	January 1997	Lux et al.	427/586
5660746	August 1997	Witanachchi et al.	219/121.66
5695617	December 1997	Graiver et al.	204/157.41
5897945	April 1999	Lieber et al.	428/323

OTHER PUBLICATIONS

M. Samy El-Shall et al., "Synthesis of Nanoscale Metal Oxide Particles . . . ", The Journal of Physical Chemistry, vol. 98, No. 12, pp. 3067-3070, Mar. 24, 1994.

ART-UNIT: 174
PRIMARY-EXAMINER: Yamnitzky; Marie
ATTY-AGENT-FIRM: McGuire Woods, LLP

ABSTRACT:

Nanoparticles of silicon oxide alloys (i.e., oxides of SiMo, SiPt, and SiAl) are produced by laser vaporization of a silicon target and a target of a metal (i.e., Mo, Pt, or Al), in an oxygen containing atmosphere in a diffusion cloud chamber, where the

target metal vapors aggregate into novel three-dimensional porous web structures. The structures have a homogeneous composition with a uniform ratio of silicon to the metal.

10 Claims, 4 Drawing figures

☐ 3. Document ID: US 5948465 A

L4: Entry 3 of 7 File: USPT Sep 7, 1999

US-PAT-NO: 5948465
DOCUMENT-IDENTIFIER: US 5948465 A

TITLE: Process for making a field emitter cathode using a particulate field emitter material

DATE-ISSUED: September 7, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Blanchet-Fincher; Graciela Beatriz	Greenville	DE		
Holstein; William Leo	Wilmington	DE		
Subramoney; Shekhar	Hockessin	DE		
Herron; Norman	Newark	DE		

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
E. I. du Pont de Nemours and Company	Wilmington	DE			02

APPL-NO: 9/ 068484
DATE FILED: May 12, 1998

PARENT-CASE:
CROSS-REFERENCE TO RELATED APPLICATIONS This application claims the benefit of U.S. Provisional Application No. 60/006,747, filed Nov. 15, 1995 and PCT International Application PCT/US96/18145, filed Nov. 13, 1996, wherein the United States was a designated country.

PCT-DATA:

APPL-NO	DATE-FILED	PUB-NO	PUB-DATE	371-DATE	102(E)-DATE
PCT/US96/18145	November 13, 1996	WO97/18577	May 22, 1997	May 12, 1998	May 12, 1998

INT-CL: [6] B05 D 5/12, H01 J 9/02

US-CL-ISSUED: 427/77; 427/226, 427/435, 427/436, 427/125, 445/50, 445/51
US-CL-CURRENT: 427/77; 427/125, 427/226, 427/435, 427/436, 445/50, 445/51

FIELD-OF-SEARCH: 427/77, 427/78, 427/125, 427/226, 427/435, 427/436, 445/50, 445/51

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
4857799	August 1989	Spindt et al.	313/495
5015912	May 1991	Spindt et al.	313/495
5129850	July 1992	Kane et al.	445/24
5199918	April 1993	Kumar	445/50
5578901	November 1996	Blancher-Fincher et al.	313/496
5616368	April 1997	Jin et al.	427/535
5619093	April 1997	Glesener et al.	313/309

FOREIGN PATENT DOCUMENTS

FOREIGN-PAT-NO	PUBN-DATE	COUNTRY	US-CL
0 712 146 A1	May 1996	EPX	
WO 91 05361	April 1991	WOX	
WO 94/15352	July 1994	WOX	
WO 94 15350	July 1994	WOX	
WO 94 28571	December 1994	WOX	
WO 95/22169	August 1995	WOX	
WO 96 00974	January 1996	WOX	
WO 97/18575	May 1997	WOX	
WO 97/18576	May 1997	WOX	

OTHER PUBLICATIONS

L. A. Chernozatonskii, et al., Electron Field Emission From Nanofilament Carbon Films, Chemical Physics Letters, 233, 63-68, Feb. 3, 1995.
Chernozatonskii et al., Nanotube Carbon Structure Tips--A Source of High Field Emission of Electrons, Mat. Res. Soc. Symp. Proc., 359, 99-104, 1995 no month data.
B. H. Fishbine et al., Buckytube Cold Field Emitter Array Cathode Experiments, Mat. Res. Soc. Symp. Proc., 359, 93-98, 1995 no month data.
Kratschmer et al., Solid C60: A New Form of Carbon, Nature, vol. 347, 354-358, Sep. 27, 1990.
Walt A. de Heer et al., Carbon Onions Produced By Heat Treatment of Carbon Soot and Their Relation To The 217.5 nm Interstellar Absorption Feature, Chemical Physics Letters, 207, 480-486, May 28, 1993.
D. Urgate, High-Temperature Behaviour of "Fullerene Black", Carbon, vol. 32, No. 7, 1245-1248, 1994 No month data.
Davanloo et al., Laser Plasma Diamond, J. Mater. Res., vol. 5, No. 11, 2398-2404, Nov., 1990.

ART-UNIT: 172
PRIMARY-EXAMINER: King; Roy V.

ABSTRACT:

A process for making a field emitter cathode is disclosed, which comprises the steps of depositing a solution of a metal compound in a solvent and an electron emitting powder onto the surface of a substrate and heating the substrate containing the solution and the electron emitting powder deposited thereon for a time and temperature sufficient for the metal compound to be completely reduced to a metal.

12 Claims, 3 Drawing figures

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw. Desc | Image

☐ 4. Document ID: US 5728195 A

L4: Entry 4 of 7 File: USPT Mar 17, 1998

US-PAT-NO: 5728195
DOCUMENT-IDENTIFIER: US 5728195 A

TITLE: Method for producing nanocrystalline multicomponent and multiphase materials

DATE-ISSUED: March 17, 1998

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Eastman; Jeffrey A.	Woodridge	IL		
Rittner; Mindy N.	Des Plaines	IL		
Youngdahl; Carl J.	Westmont	IL		
Weertman; Julia R.	Evanston	IL		

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
The United States of America as represented by the Department of Energy	Washington	DC			06

APPL-NO: 8/ 801672
DATE FILED: February 18, 1997

PARENT-CASE:
This is a continuation of application Ser. No. 08/402,999 filed Mar. 10, 1995, now abandoned.

INT-CL: [6] B22 F 1/00, B22 F 9/00

US-CL-ISSUED: 75/351; 264/430, 264/434
US-CL-CURRENT: 75/351; 264/430, 264/434

FIELD-OF-SEARCH: 264/430, 264/434, 75/351

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
4533383	August 1985	Miura et al.	75/351
5128081	July 1992	Siegel et al.	264/81
5223186	June 1993	Eastman et al.	264/81

OTHER PUBLICATIONS

Eastman, et al. "Synthesis of Nanophase Materials By Electron Beam Evaporon" NanoStructed Materials vol. 2 pp. 377-382.
Eastman "Electron Beam Synthesis Nanophase Materials in Inert and Reactive Gases", Invited Talk, Engineering Conference (1994) (2 pgs).
Niedzielka et al., "Nanocrystalline Aluminum-Zirconium Alloys", Engineering Foundation Conference (Mar. 12, 1994). 2 pgs.
Rittner et al., "Synthesis and Properties Studies of Nanocrystalline AL-Z1.sub.3 Zr", Scipts Metallurgies of Materials vol. 31 pp. 841-846 (May 1994) (6 pgs).
Youngdahl et al., "Synthesis of Metal-Oxide Nanocomposites", Materials Research Society (Nov. 1994) (4 pgs).

ART-UNIT: 137
PRIMARY-EXAMINER: Fiorilla; Christopher A.
ATTY-AGENT-FIRM: Alwan; Joy Anderson; Thomas G. Moser; William R.

ABSTRACT:

A process for producing multi-component and multiphase nanophase materials is provided wherein a plurality of elements are vaporized in a controlled atmosphere, so as to facilitate thorough mixing, and then condensing and consolidating the elements. The invention also provides for a multicomponent and multiphase nanocrystalline material of specified elemental and phase composition having component grain sizes of between approximately 1 nm and 100 nm. This material is a single element in combination with a binary compound. In more specific embodiments, the single element in this material can be a transition metal element, a non-transition metal element, a semiconductor, or a semi-metal, and the binary compound in this material can be an intermetallic, an oxide, a nitride, a hydride, a chloride, or other compound.

12 Claims, 6 Drawing figures

☐ 5. Document ID: US 5518831 A

L4: Entry 5 of 7 File: USPT May 21, 1996

US-PAT-NO: 5518831
DOCUMENT-IDENTIFIER: US 5518831 A

TITLE: Electrocatalytic structure

DATE-ISSUED: May 21, 1996

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Tou; James C.	Midland	MI		
Hu; Ing-Feng	Midland	MI		

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
The Dow Chemical Company	Midland	MI			02

APPL-NO: 8/ 499626
DATE FILED: July 7, 1995

INT-CL: [6] H01 M 8/10, H01 M 4/86

US-CL-ISSUED: 429/42; 429/43, 427/115
US-CL-CURRENT: 429/42; 427/115, 429/43

FIELD-OF-SEARCH: 429/12, 429/30, 429/33, 429/40, 429/41, 429/42, 429/43, 429/44, 429/191, 429/192, 427/115, 204/410, 204/421, 204/29R, 204/291, 502/101, 502/150

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
4039409	August 1977	LaConti et al.	204/129
4214958	July 1980	Coker et al.	204/98
4876115	October 1989	Raistrick	427/115
5084144	January 1992	Reddy et al.	205/104
5151515	September 1992	Cisar	546/12
5158933	October 1992	Holtz et al.	305/1
5171644	December 1992	Tsou et al.	429/12
5188923	February 1993	Ahn et al.	430/273
5294319	March 1994	Kaczur et al.	204/290
5302269	April 1994	Eisman et al.	204/252

OTHER PUBLICATIONS

A. Hamnett and G. L. Troughton, "Electrocatalysis and the Direct Methanol Fuel Cell", Chemistry & Industry, pp. 480-483, (1992) month not available.
K. Prater, "The Renaissance of the Solid Fuel Cell," Journal of Power Sources, 29, pp. 238-250, (1990) month not available.
H. R. Zeller and D. Kuse, "Optical Properties of Electrically Insulating Granular Metal Films", J. Appl. Phys., vol. 44, No. 6, pp. 2763-2764, (1973) month not available.
M. S. Wilson and S. Gottesfeld, "Thin-Film Catalyst Layers for Polymer Electrolyte Fuel Cell Electrodes", Journal of Applied Electrochemistry, 22, pp. 1-7, (1992) month not available.
E. A. Ticianelli et al., "Localization of Platinum in Low Catalyst Loading Electrodes to Attain High Power Densities in SPE Fuel Cells," J. Electroanal. Chem., 251, pp. 275-295, (1988) month not available.
A. J. Appleby and E. B. Yeager, "Solid Polymer Electrolyte Fuel Cells (SPEFCs)", Energy, The International Journal, vol. 11, Chap. 4, pp. 137-152, (1986) month not available.

ART-UNIT: 111
PRIMARY-EXAMINER: Skapars; Anthony

ABSTRACT:

An electrocatalytic structure is disclosed which comprises a matrix of a SiO.sub.x C.sub.y H.sub.z having dispersed therein discrete particles of a catalytic material. The method of preparation and use in electrochemical reactions is taught.

7 Claims, 3 Drawing figures

☐ 6. Document ID: US 5219577 A

L4: Entry 6 of 7 File: USPT Jun 15, 1993

US-PAT-NO: 5219577
DOCUMENT-IDENTIFIER: US 5219577 A

TITLE: Biologically active composition having a nanocrystalline core

DATE-ISSUED: June 15, 1993

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Kossovsky; Nir	Los Angeles	CA		
Bunshah; Rointan F.	Playa del Rey	CA		

ASSIGNEE-INFORMATION:

NAME	CITY	STATE ZIP CODE	COUNTRY TYPE CODE
The Regents of the University of California	Oakland	CA	02

APPL-NO: 7/ 542255
DATE FILED: June 22, 1990

INT-CL: [5] A61K 9/16

US-CL-ISSUED: 424/494; 424/9, 424/88, 424/89, 424/490, 424/493, 514/770, 514/951, 514/970
US-CL-CURRENT: 424/494; 424/196.11, 424/204.1, 424/490, 424/493, 514/770, 514/951, 514/970

FIELD-OF-SEARCH: 424/494, 424/489, 424/490, 424/493, 424/497

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
4225581	September 1980	Kreuter et al.	424/88
4329332	May 1982	Couvreur et al.	424/9
4744760	May 1988	Molday	44/493

OTHER PUBLICATIONS

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Kvalheim, G., Immunomagnetic Removal of B-Lymphoma Cells . . . , Bone Marrow Transplantation (1989), 4, pp. 567-574.
Varga, J. M., Immobilization of Small Molecules and Proteins. . . , FASEB Journal, vol. 4 Jun. 1990, pp. 2671-2677.
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Johansson, M. E. et al., Prep. of Specific Antisera Against Adenoviruses . . . , Journ. of Immun. Methods, 26(1979) 141-149.
Warren, H. S. et al., Current Status of Immunological Adjuvants, Ann. Rev. Immunol. 1986 4:369-388.
Davis, S. S., Polymerica Microspheres as Drug Carriers, Biomaterials, 1988, vol. 9, Jan. pp. 111-115.
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Kubiak, C., Couvreur, P. Manil, L., Clausse, B., "Increased cytotoxicity of nanoparticle-carried Adriamycin in vitro and potentiation by verapamil and amiodarone", Biomaterials 1989, vol. 10, Oct. pp. 553-556.
Manil, L., Roblot-Treupel, L., Couvreur, P., "Isobutyl cyanoimmunoradiometric assay", Biomaterials 1986, vol. 7 May 1986, pp. 212-216.
Couvreur, P., Kante, B., Lenaerts, V., Scailteur, V., Roland, V., and Speiser, P., "Tissue Distribution of Antitumor Drugs Associated with Polyalkylcyanoacrylate Nanoparticles", Jour. of Pharm. Sci. vol. 69, No. 2, Feb. 1980, pp. 199-202.

Couvreur, P., Kante, B., Roland, M., Guio, P., Bauduin, P., Speiser, P. "Communications", J. Pharm. Pharmacol. 1979, 31:331-332.
Pyle, Stephen W., et al., "Immune response to immunostimulatory complexes . . . ", Vaccine, vol. 7, Oct. 1989, pp. 465-473.
Lovgren, Karin, and Morein, Bror, "The Iscom: An Antigen Delivery System with Built-In Adjuvant", Molecular Immun., vol. 28, No. 3, pp. 285-286, 1991.
Morein, B., "Iscom, a novel structure for antigenic presentation of membrane proteins from enveloped viruses", Letters to Nature, Mar. 1984, pp. 457-460.
Morein, Bror, "The iscom: an Immunostimulating System", Immunology Letters, 25 (1990) pp. 281-284.

ART-UNIT: 152
PRIMARY-EXAMINER: Page; Thurman K.
ASSISTANT-EXAMINER: Spear; James M.
ATTY-AGENT-FIRM: Poms, Smith, Lande & Rose

ABSTRACT:

A biologically active composition made up of core particles having diameters of less than about 1000 nanometers which are coated with a layer which is designed to allow attachment of biologically active proteins, peptides or pharmacological agents to the microparticles. When viral protein is attached to the core particles, the result is a viral decoy which accurately mimics the native virus in both size and structure while being entirely devoid of virulent activity due to the microparticle core. Other antigenic proteins or peptides are attached to provide molecules which are useful in raising antibodies or as a diagnostic tool. Further, pharmacological agents are attached to the microparticles to provide pharmaceutical compositions.

13 Claims, 0 Drawing figures

☐ 7. Document ID: US 5178882 A

L4: Entry 7 of 7 File: USPT Jan 12, 1993

US-PAT-NO: 5178882
DOCUMENT-IDENTIFIER: US 5178882 A

TITLE: Viral decoy vaccine

DATE-ISSUED: January 12, 1993

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Kossovsky; Nir	Los Angeles	CA		
Bunshah; Rointan F.	Playa del Rey	CA		

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
The Regents of the University of California	Oakland	CA			02

APPL-NO: 7/ 690601
DATE FILED: April 24, 1991

PARENT-CASE:
This is a continuation-in-part of co-pending application Ser. No. 07/542,255 which was filed on Jun. 22, 1990.

INT-CL: [5] A61K 9/16, A61K 39/12

US-CL-ISSUED: 424/494; 424/490, 424/493, 424/88, 424/89, 514/934, 514/2
US-CL-CURRENT: 424/494; 424/204.1, 424/208.1, 424/230.1, 424/231.1, 424/232.1, 424/490, 424/493, 514/2, 514/934

FIELD-OF-SEARCH: 424/494, 424/489, 424/490, 424/493, 424/497, 424/88, 424/89, 424/93

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
4225581	September 1980	Kreuter et al.	424/88
4329332	May 1982	Couvreur et al.	424/92

OTHER PUBLICATIONS

Kvalheim, G., Immunomagnetic Removal of B-Lymphoma Cells Bone Marrow Transplantation (1989), 4, pp. 567-574.
Varga, J. M., Immobilization of Small Molecules and Proteins, FASEB Journal, vol. 4, Jun. 1990, pp. 2671-2677.
Kubiak, C., Couvreur, P., Manil, L., Clausse , B., "Increased Cytotoxicity of Nanoparticles Carried Adriamycin in Vitro and Potentiation by Verapamil and Amiodarone", Biomaterials 1989, vol. 10 Oct. pp. 553-556.
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Lovgren, et al., Mol. Imm., vol. 28, No. 3, 1991, pp. 285-286.
Morein, et al., Letters to Nature, 1984, pp. 457-460.
Morein, B., Imm. Letters, 25 (1990) pp. 281-282.

ART-UNIT: 152
PRIMARY-EXAMINER: Page; Thurman K.
ASSISTANT-EXAMINER: Spear; James M.
ATTY-AGENT-FIRM: Poms, Smith, Lande & Rose

ABSTRACT:

A biologically active composition made up of core particles having diameters of less than about 1000 nanometers which are coated with a layer which is designed to allow attachment of biologically active proteins, peptides or pharmacological agents to the microparticles. When viral protein is attached to the core particles, the result is a viral decoy which accurately mimics the native virus in both size and structure while being entirely devoid of virulent activity due to the microparticle core. Other antigenic proteins or peptides are attached to provide molecules which are useful in raising antibodies or as a diagnostic tool. Further, pharmacological agents are attached to the microparticles to provide pharmaceutical compositions. The viral decoys are useful as vaccines for treating animals to elicit an immune response.

18 Claims, 0 Drawing figures

Term	Documents
MOLYBDENUM.DWPI,EPAB,JPAB,USPT,PGPB.	115240
MOLYBDENUMS.DWPI,EPAB,JPAB,USPT,PGPB.	9
CHROMIUM.DWPI,EPAB,JPAB,USPT,PGPB.	179028
CHROMIUMS.DWPI,EPAB,JPAB,USPT,PGPB.	28
CHROMIA.DWPI,EPAB,JPAB,USPT,PGPB.	3144
CHROMIAS.DWPI,EPAB,JPAB,USPT,PGPB.	4
TUNGESTEN.DWPI,EPAB,JPAB,USPT,PGPB.	55
TUNGESTENS	0
(3 AND (TUNGESTEN OR MOLYBDENUM OR CHROMIUM)).USPT,PGPB,JPAB,EPAB,DWPI.	7
(L3 AND (MOLYBDENUM OR CHROMIUM OR TUNGESTEN)).USPT,PGPB,JPAB,EPAB,DWPI.	7

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WEST

Freeform Search

Database: US Patents Full-Text Database
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IBM Technical Disclosure Bulletins

Term: nanosiz$2 near2 catalyst

Display: 10 **Documents in Display Format:** - **Starting with Number** 1

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DB=USPT,PGPB,JPAB,EPAB,DWPI; PLUR=YES; OP=ADJ			
L12	nanosiz$2 near2 catalyst	10	L12
L11	nanoparticl$2 size near3 catalyst	1	L11
L10	nanoparticl$2 size catalyst	0	L10
L9	nanoparicl$2 size catalyst	0	L9
L8	nanosized with (molybdenum or chromium or tungesten)	3	L8
L7	nanosized near4 (molybdenum or chromium or tungesten)	0	L7
L6	nanosixed near4 (molybdenum or chromium or tungesten)	0	L6
L5	nanoparticles near4 (molybdenum or chromium or tungesten)	3	L5
L4	L3 and synthesis gas	1	L4
L3	L2 and alcohol	157	L3
L2	L1 and (chromium or molybdenum or tungesten)	266	L2
L1	nanosized or nanoparticles	2710	L1

END OF SEARCH HISTORY

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Search Results - Record(s) 1 through 10 of 10 returned.

☐ 1. Document ID: US 20010053344 A1

L12: Entry 1 of 10 File: PGPB Dec 20, 2001

PGPUB-DOCUMENT-NUMBER: 20010053344
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20010053344 A1

TITLE: Method and apparatus for producing carbonaceous articles

PUBLICATION-DATE: December 20, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Harutyunyan, Avetik R.	State College	PA	US	
Grigorian, Leonid	Arvada	CO	US	

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	COUNTRY	TYPE CODE
The Penn State Research Foundation				02

APPL-NO: 09/ 880798
DATE FILED: June 15, 2001

RELATED-US-APPL-DATA:

RLAN	RLFD	RLPC	RLKC	RLAC
60212192	Jun 16, 2000			US

INT-CL: [07] C01 B 31/02

US-CL-PUBLISHED: 423/445.00R
US-CL-CURRENT: 423/445R

REPRESENTATIVE-FIGURES: NONE

ABSTRACT:

An apparatus for the production of elongated carbonaceous article includes a chamber having at least one heating element, a catalyst and a device for generating a magnetic field in proximity to or around the catalyst. In operation, a carbon-containing precursor is introduced to the chamber to contact the catalyst with a sufficient amount of heat to cause the deposition of carbon on the catalyst. Continual deposition of carbon over time forms elongated carbon structures, such as carbon fibers and carbon nanotubes. By operating the device to magnetically confine the catalyst during the formation of the carbon structures, migration of catalyst is reduced or prevented thereby minimizing contaminants in the produced products and improving the useful life of the catalyst.

RELATED APPLICATION

[0001] The present application claims priority to U.S. Provisional Application Ser. No. 60/212,192 filed Jun. 16, 2000 and entitled "METHOD AND APPARATUS FOR INCREASED YIELD

OF CARBON FIBERS AND SINGLE-WALL CARBON NANOTUBES SYNTHESIZED BY CHEMICAL VAPOR DEPOSITION", the entire disclosure of which is hereby incorporated in its entirety herein by reference.

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC
Draw Desc | Image

☐ 2. Document ID: US 20010023986 A1

L12: Entry 2 of 10 File: PGPB Sep 27, 2001

PGPUB-DOCUMENT-NUMBER: 20010023986
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20010023986 A1

TITLE: System and method for fabricating logic devices comprising carbon nanotube transistors

PUBLICATION-DATE: September 27, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Mancevski, Vladimir	Austin	TX	US	

APPL-NO: 09/ 779374
DATE FILED: February 7, 2001

RELATED-US-APPL-DATA:

RLAN	RLFD	RLPC	RLKC	RLAC
09779374	Feb 7, 2001	PENDING	A1	US
09669212	Sep 25, 2000			US
60180595	Feb 7, 2000			

INT-CL: [07] H01 L 51/40, H01 L 23/52

US-CL-PUBLISHED: 257/741; 313/310, 438/99
US-CL-CURRENT: 257/741; 313/310, 438/99

REPRESENTATIVE-FIGURES: 2

ABSTRACT:

Carbon nanotube devices and methods for fabricating these devices, wherein in one embodiment, the fabrication process consists of the following process steps: (1) generation of a template, (2) catalyst deposition, and (3) nanotube synthesis within the template. In another embodiment, a carbon nanotube transistor comprises a carbon nanotube having two or more defects, wherein the defects divide the carbon nanotube into three regions having differing conductivities. The defects may be introduced by varying the diameter of a template in which the carbon nanotube is fabricated and thereby causing pentagon-heptagon pairs which form the defects.

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC
Draw Desc | Image

☐ 3. Document ID: US 6248796 B1

L12: Entry 3 of 10 File: USPT Jun 19, 2001

US-PAT-NO: 6248796
DOCUMENT-IDENTIFIER: US 6248796 B1

TITLE: Method for production of mixed alcohols from synthesis gas

DATE-ISSUED: June 19, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Jackson; Gene R.	Arvada	CO		
Mahajan; Devinder	South Setauket	NY		

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
PowerEnerCat. Inc.	Lakewood	CO			02

APPL-NO: 9/ 438333
DATE FILED: November 13, 1999

PARENT-CASE:
RELATED U.S. APPLICATION DATA This application claims the benefit of United States Provisional Application Ser. No. 60/108,364, filed Nov. 13, 1999, for A NOVEL METHOD FOR PRODUCTION OF MIXED ALCOHOLS FROM SYNTHESIS GAS.

INT-CL: [7] C07 C 27/00

US-CL-ISSUED: 518/714; 518/700
US-CL-CURRENT: 518/714; 518/700

FIELD-OF-SEARCH: 518/700, 518/514

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
4752623	June 1988	Stevens et al.	518/514

OTHER PUBLICATIONS

Mdleleni et al. J. Amer. Chem. Soc. 120, 6189-6190, Jun. 1998.

ART-UNIT: 161
PRIMARY-EXAMINER: Richter; Johann
ASSISTANT-EXAMINER: Parsa; J.
ATTY-AGENT-FIRM: Margolis; Donald W.

ABSTRACT:

A method for production of mixed alcohols by using a sulfided transition metal catalyst selected from Group VI metals; nano-sizing the metal catalyst during its synthesis; suspending the catalyst in solvents to form a slurry; adding, a sulfur containing material to extend catalyst life; and contacting this slurry with carbon monoxide and hydrogen at 200-325.degree. C. and 500-3000 psig pressure.

2 Claims, 1 Drawing figures

☐ 4. Document ID: US 6146227 A

L12: Entry 4 of 10 File: USPT Nov 14, 2000

US-PAT-NO: 6146227
DOCUMENT-IDENTIFIER: US 6146227 A

TITLE: Method for manufacturing carbon nanotubes as functional elements of MEMS devices

DATE-ISSUED: November 14, 2000

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Mancevski; Vladimir	Austin	TX		

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Xidex Corporation	Austin	TX			02

APPL-NO: 9/ 407394
DATE FILED: September 28, 1999

PARENT-CASE:
RELATED APPLICATIONS This application claims the benefit of U.S. Provisional Application No. 60/102,159 filed on Sep. 28, 1998. Additionally, this application incorporates by reference the prior U.S. Provisional Application No. 60/102,159 filed on Sep. 28, 1998 entitled "Method for Manufacturing Carbon Nanotubes" to Vladimir Mancevski.

INT-CL: [7] H01 J 9/02

US-CL-ISSUED: 445/24; 445/50
US-CL-CURRENT: 445/24; 445/50

FIELD-OF-SEARCH: 445/24, 445/50

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
5764004	June 1998	Rabinowitz	315/169.1
5773921	June 1998	Keesmann et al.	313/309
5973444	October 1999	Xu et al.	313/309

FOREIGN PATENT DOCUMENTS

FOREIGN-PAT-NO	PUBN-DATE	COUNTRY	US-CL
10203810A	August 1998	JPX	
WO 98/11588	March 1998	WOX	

OTHER PUBLICATIONS

W. Z. Li et al., Large-Scale Synthesis of Aligned Carbon Nanotubes, Dec. 6, 1996,

Science, 1701-1703.

ART-UNIT: 289
PRIMARY-EXAMINER: Ramsey; Kenneth J.
ATTY-AGENT-FIRM: Gray Cary Ware & Freidenrich, LLP

ABSTRACT:

A system and method for manufacturing carbon nanotubes as functional elements of MEMS devices. The method of the present invention comprises the steps of preparing a MEMS substrate for synthesis of a carbon nanotube. A nanosize hole or catalyst retaining structure is fabricated on the MEMS substrate in which a nanotube catalyst is deposited. A nanotube is then synthesized within the nanosize hole.

69 Claims, 4 Drawing figures

☐ 5. Document ID: US 6132825 A

L12: Entry 5 of 10 File: USPT Oct 17, 2000

US-PAT-NO: 6132825
DOCUMENT-IDENTIFIER: US 6132825 A

TITLE: Sterilant degrading polymeric material

DATE-ISSUED: October 17, 2000

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Frisk; Peter	Chicago	IL		

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Tetra Laval Holdings & Finance, SA	Pully			CHX	03

APPL-NO: 8/ 690241
DATE FILED: July 12, 1996

INT-CL: [7] B29 D 22/00

US-CL-ISSUED: 428/35.7
US-CL-CURRENT: 428/35.7

FIELD-OF-SEARCH: 524/435, 428/35.7, 428/35.8, 428/36.8

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
3281497	October 1966	Joo et al.	
3828833	August 1974	Smith et al.	
3962189	June 1976	Russin et al.	252/428
4230663	October 1980	Forstrom et al.	422/33
4235265	November 1980	Feliks	
4331491	May 1982	Shaw et al.	
4368081	January 1983	Hata et al.	134/2
4533576	August 1985	Tanahashi et al.	428/35
4547536	October 1985	Nabors	523/514
4569869	February 1986	Kushida et al.	428/35
4756882	July 1988	Jacobs et al.	422/23
4767804	August 1988	Willoughby	
4937055	June 1990	Kittler et al.	427/126.3
5037684	August 1991	Dundas et al.	
5077258	December 1991	Phillips et al.	
5152900	October 1992	Sekiguchi et al.	210/644
5166311	November 1992	Nichols	528/285
5235010	August 1993	Giovando	526/113
5270002	December 1993	Neff, II et al.	
5342673	August 1994	Bowman et al.	
5346733	September 1994	Dalgewicz, III et al.	
5373971	December 1994	Laffy et al.	
5405880	April 1995	Kimura et al.	
5409983	April 1995	Jones et al.	
5417908	May 1995	Enggasser et al.	524/706
5489022	February 1996	Baker	
5554373	September 1996	Seabrook et al.	
5609837	March 1997	Cerny et al.	422/301

FOREIGN PATENT DOCUMENTS

FOREIGN-PAT-NO	PUBN-DATE	COUNTRY	US-CL
0153894	September 1985	EPX	
9618686	June 1996	WOX	

ART-UNIT: 173
PRIMARY-EXAMINER: Reddick; Judy M.
ATTY-AGENT-FIRM: Welsh & Katz, Ltd.

ABSTRACT:

A polymeric material integrated with a metal catalyst for promoting the degradation of a sterilants such as hydrogen peroxide and ozone. Examples of possible polymeric materials are PET, COPET and any mixture thereof. The polymer materials are usually configured into containers for aseptic processing. The metal catalyst may be selected from the group consisting of iron, cobalt, nickel, ruthenium, palladium, osmium, iridium, platinum, copper, manganese, salts thereof, oxides thereof and mixtures thereof. The metal catalyst is less than ten percent of the total weight of the modified polymeric material. The metal catalyst may be a plurality of nanosize particles or microsize particles. The metal catalyst may also be applied as a thin film onto a polymeric resin for absorption thereby. The sterilants usually become entrapped in amorphous zones of the polymeric material which results in higher than acceptable levels of sterilants in the containers. The novel polymeric material allows for application of a sterilant in the vapor phase, and substantially reduces the residence time of the sterilant as a container undergoes aseptic processing thereby expediting

the aseptic process.

1 Claims, 5 Drawing figures

☐ 6. Document ID: US 6054043 A

L12: Entry 6 of 10 File: USPT Apr 25, 2000

US-PAT-NO: 6054043
DOCUMENT-IDENTIFIER: US 6054043 A

TITLE: Process for the hydrogenation of hydro-carbonaceous materials (Carb-Mat) for the production of vaporizable products

DATE-ISSUED: April 25, 2000

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Simpson; Theodore B.	McLean	VA	22101	

APPL-NO: 8/ 411988
DATE FILED: March 28, 1995

INT-CL: [7] C10 G 1/06

US-CL-ISSUED: 208/408; 208/411, 208/419, 208/426
US-CL-CURRENT: 208/408; 208/411, 208/419, 208/426

FIELD-OF-SEARCH: 208/408, 208/426, 208/411, 208/415, 208/420, 208/419, 201/21, 201/23, 201/32, 201/33, 201/34, 201/36, 201/42

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
3001652	September 1961	Schroeder et al.	214/17
3030297	April 1962	Schroeder	208/8
3152063	October 1964	Schroeder et al.	208/10
3762773	October 1973	Schroeder	302/53
3775071	November 1973	Hoffert et al.	48/197R
3839186	October 1974	Berger	208/8
3988237	October 1976	Davis et al.	208/8
4077867	March 1978	Aldrige et al.	208/10
4097361	June 1978	Ashworth	208/10
4169128	September 1979	Sinor et al.	422/224
4200494	April 1980	Welter et al.	208/8R
4200495	April 1980	Liss et al.	208/8
4206032	June 1980	Friedman et al.	208/8R
4218287	August 1980	Albright et al.	208/8R
4379744	April 1983	Rosenthal et al.	208/10
4404084	September 1983	Huibers et al.	208/10
4437973	March 1984	Huibers et al.	208/82E
4485008	November 1984	Maa et al.	208/10
4735706	April 1988	Ruether	208/408
5015366	May 1991	Ruether	208/408
5055181	October 1991	Maa et al.	208/421
5336395	August 1994	Pabst et al.	208/403
5350430	September 1994	Coleman et al.	44/627
5648877	July 1997	Epstein	48/210

ART-UNIT: 174
PRIMARY-EXAMINER: Yildirim; Bekir L.

ABSTRACT:

A process for the reductive hydrogenation of insufficiently hydrogenated, non-volatile carbonaceous materials to produce vaporizable products wherein the feed materials are brought into initial solution under pressure 300-500.degree. C. with or without the addition of recycle solvent with or without added catalyst. The catalyst may, as an option, be added during agglomeration, if that technique is used, as an oily precursor or as a slurry of a somewhat hydrophobic {namosize} nanosize particulate catalyst or catalyst precursor. Short-contact-time reactors providing plug-type flow and high shear are used. The resultant ashy slurry is passed, highly dispersed, into a fluidized or moving bed of solids that may be inert or catalytic at 350-500.degree. C. and 100-3500 psi where a reducing gas passing up through the bed reductively increases the volatility and decreases the molecular weight of the feed in what is the equivalent of reaction of the feed on each particle in an extremely piston flow manner. As a result, yield loss resulting from coking and gasification of the feed that would be a consequence of too long a reaction time is avoided. The yield improvement is further augmented by the increase in reaction rate that results from the greater area available for transfer of the reducing gas to the film of feed on the particles and from the thinner film through which the reducing gas must diffuse and from the greater catalyst:feed ratio that results from the build-up of catalyst on the particles. A purge of the particulate solids forming the bed passes to a second vessel where its coating may be attrited off the particulate to prepare it for recycle. After or previous to its separation, the coating may be treated to recover energy from its coke content, and catalyst from its ash, all difficult, costly steps in such existing processes as coal liquefaction.

7 Claims, 1 Drawing figures

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw. Desc | Image

☐ 7. Document ID: AU 200127022 A, WO 200154216 A2

L12: Entry 7 of 10 File: DWPI Jul 31, 2001

DERWENT-ACC-NO: 2001-602292
DERWENT-WEEK: 200171

TITLE: Fuel cell useful as, e.g. primary battery, includes solid electrolyte membrane comprising electrically nonconductive inorganic powder, acid or aqueous acid solution, and polymeric binder

INVENTOR: AHARON, A; DUVDEVANI, T ; MELMAN, A ; PELED, E

PRIORITY-DATA: 2000US-0604297 (June 26, 2000), 2000US-0484267 (January 18, 2000)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
AU 200127022 A	July 31, 2001		000	H01M008/00
WO 200154216 A2	July 26, 2001	E	048	H01M008/00

INT-CL (IPC): H01 M 8/00

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC
Draw. Desc | Clip Img | Image

☐ 8. Document ID: WO 200157917 A2, US 2001023986 A1, AU 200136763 A

L12: Entry 8 of 10 File: DWPI Aug 9, 2001

DERWENT-ACC-NO: 2001-581768
DERWENT-WEEK: 200165

TITLE: Logic device as, e.g. multi-gigaflop processor, comprises interconnecting carbon nanotube devices having electrically connected carbon nanotubes on substrate levels

INVENTOR: MANCEVSKI, V

PRIORITY-DATA: 2000US-180595P (February 7, 2000), 2000US-0669212 (September 25, 2000), 2001US-0779374 (February 7, 2001)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
WO 200157917 A2	August 9, 2001	E	034	H01L021/00
US 2001023986 A1	September 27, 2001		000	H01L051/40
AU 200136763 A	August 14, 2001		000	H01L021/00

INT-CL (IPC): H01 L 21/00; H01 L 23/52; H01 L 51/40

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC
Draw. Desc | Clip Img | Image

☐ 9. Document ID: CA 2308015 A1, WO 200019494 A1, AU 9962672 A, US 6146227 A, EP 1135792 A1

L12: Entry 9 of 10 File: DWPI Nov 11, 2001

DERWENT-ACC-NO: 2000-328794
DERWENT-WEEK: 200227
COPYRIGHT 2002 DERWENT INFORMATION LTD
TITLE: Manufacture of carbon nanotube(s) as functional elements of a microelectromechanical system device includes synthesizing the carbon nanotube(s) within a catalyst retaining structure

INVENTOR: MANCEVSKI, V

PRIORITY-DATA: 1998US-102159P (September 28, 1998), 1999US-0407394 (September 28, 1999), 2000CA-2308015 (May 11, 2000)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
CA 2308015 A1	November 11, 2001	E	000	B81C001/00
WO 200019494 A1	April 6, 2000	E	051	H01L021/00
AU 9962672 A	April 17, 2000		000	H01L021/00
US 6146227 A	November 14, 2000		000	H01J009/02
EP 1135792 A1	September 26, 2001	E	000	H01L021/00

INT-CL (IPC): B81 C 1/00; B82 B 3/00; H01 J 1/14; H01 J 9/02; H01 J 19/24; H01 L 21/00

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC
Draw. Desc | Clip Img | Image

☐ 10. Document ID: JP 2001526164 W, WO 9929940 A1, US 6045769 A, EP 1040216 A1, TW 414815 A, KR 2001032588 A

L12: Entry 10 of 10 File: DWPI Dec 18, 2001

DERWENT-ACC-NO: 1999-418602
DERWENT-WEEK: 200203
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TITLE: Production of elemental carbon e.g. fibers or particles

INVENTOR: BI, X; KAMBE, N

PRIORITY-DATA: 1997US-0986878 (December 8, 1997)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
JP 2001526164 W	December 18, 2001		035	C01B031/02
WO 9929940 A1	June 17, 1999	E	036	D01F009/127
US 6045769 A	April 4, 2000		000	D01F009/127
EP 1040216 A1	October 4, 2000	E	000	D01F009/127
TW 414815 A	December 11, 2000		000	B01J023/745
KR 2001032588 A	April 25, 2001		000	D01F009/127

INT-CL (IPC): B01 J 23/745; B01 J 27/049; B01 J 27/22; C01 B 31/02; D01 F 9/127

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC
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Term	Documents
NANOSIZ$2	0
NANOSIZE.DWPI,EPAB,JPAB,USPT,PGPB.	234
NANOSIZED.DWPI,EPAB,JPAB,USPT,PGPB.	155
NANOSIZER.DWPI,EPAB,JPAB,USPT,PGPB.	270
NANOSIZES.DWPI,EPAB,JPAB,USPT,PGPB.	4
CATALYST.DWPI,EPAB,JPAB,USPT,PGPB.	610986
CATALYSTS.DWPI,EPAB,JPAB,USPT,PGPB.	192120
(NANOSIZ$2 NEAR2 CATALYST).USPT,PGPB,JPAB,EPAB,DWPI.	10
(NANOSIZ$2 NEAR2 CATALYST).USPT,PGPB,JPAB,EPAB,DWPI.	10

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 NEWS  4  Feb 01  DKILIT now produced by FIZ Karlsruhe and has a new update
                  frequency
 NEWS  5  Feb 19  Access via Tymnet and SprintNet Eliminated Effective 3/31/02
 NEWS  6  Mar 08  Gene Names now available in BIOSIS
 NEWS  7  Mar 22  TOXLIT no longer available
 NEWS  8  Mar 22  TRCTHERMO no longer available
 NEWS  9  Mar 28  US Provisional Priorities searched with P in CA/CAplus
                  and USPATFULL
 NEWS 10  Mar 28  LIPINSKI/CALC added for property searching in REGISTRY
 NEWS 11  Apr 02  PAPERCHEM no longer available on STN.  Use PAPERCHEM2 instead.
 NEWS 12  Apr 08  "Ask CAS" for self-help around the clock
 NEWS 13  Apr 09  BEILSTEIN: Reload and Implementation of a New Subject Area
 NEWS 14  Apr 09  ZDB will be removed from STN
 NEWS 15  Apr 19  US Patent Applications available in IFICDB, IFIPAT, and IFIUDB
 NEWS 16  Apr 22  Records from IP.com available in CAPLUS, HCAPLUS, and ZCAPLUS
 NEWS 17  Apr 22  BIOSIS Gene Names now available in TOXCENTER
 NEWS 18  Apr 22  Federal Research in Progress (FEDRIP) now available

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               AND CURRENT DISCOVER FILE IS DATED 05 FEBRUARY 2002
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                                                   ENTRY    SESSION
FULL ESTIMATED COST                                 0.21       0.21
```

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FILE COVERS 1907 - 12 May 2002 VOL 136 ISS 20
FILE LAST UPDATED: 10 May 2002 (20020510/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

CAS roles have been modified effective December 16, 2001. Please check your SDI profiles to see if they need to be revised. For information on CAS roles, enter HELP ROLES at an arrow prompt or use the CAS Roles thesaurus (/RL field) in this file.

```
=> s nanosiz? (2a) catalyst
          2980 NANOSIZ?
        588247 CATALYST
        551461 CATALYSTS
        740761 CATALYST
                  (CATALYST OR CATALYSTS)
L1          55 NANOSIZ? (2A) CATALYST

=> s l1 and (chromium or tungesten or molybdenum)
        271938 CHROMIUM
            75 CHROMIUMS
        271943 CHROMIUM
                  (CHROMIUM OR CHROMIUMS)
            12 TUNGESTEN
        174290 MOLYBDENUM
            34 MOLYBDENUMS
        174294 MOLYBDENUM
                  (MOLYBDENUM OR MOLYBDENUMS)
L2           3 L1 AND (CHROMIUM OR TUNGESTEN OR MOLYBDENUM)

=> d l2 ibib ab 1-3

L2   ANSWER 1 OF 3  CAPLUS  COPYRIGHT 2002 ACS
ACCESSION NUMBER:         2001:930804  CAPLUS
DOCUMENT NUMBER:          136:29130
TITLE:                    Production of nanosize photocatalyst mixture of
                          molybdenum oxide/TiO2 for use with sunlight
INVENTOR(S):              Lee, Tae Kyu; Jeon, Myeong Seok; Ju, Hyeon Kyu
PATENT ASSIGNEE(S):       Korea Institute of Energy Research, S. Korea
SOURCE:                   Repub. Korean Kongkae Taeho Kongbo, No pp. given
                          CODEN: KRXXA7
DOCUMENT TYPE:            Patent
LANGUAGE:                 Korean
FAMILY ACC. NUM. COUNT:   1
```

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
KR 2000017724	A	20000406	KR 1999-38972	19990913

AB A visible light photocatalyst is provided which contains metal ion dopants which have oxidn./redn. potential between band gap of energy of TiO2. The doping metal ions are for changing the speed of recombination of a pair of elec. charges by acting as an electron- or a trap site in a lattice.

L2 ANSWER 2 OF 3 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1999:813734 CAPLUS
DOCUMENT NUMBER: 132:137022
TITLE: Methane Dehydro-aromatization over Mo/HZSM-5 in the Absence of Oxygen: A Multinuclear Solid-State NMR Study of the Interaction between Supported Mo Species and HZSM-5 Zeolite with Different Crystal Sizes
AUTHOR(S): Zhang, Weiping; Ma, Ding; Han, Xiuwen; Liu, Xiumei; Bao, Xinhe; Guo, Xinwen; Wang, Xiangsheng
CORPORATE SOURCE: State Key Laboratory of Catalysis, Dalian Institute of Chemical Physics, Chinese Academy of Sciences, Dalian, 116023, Peop. Rep. China
SOURCE: Journal of Catalysis (1999), 188(2), 393-402
CODEN: JCTLA5; ISSN: 0021-9517
PUBLISHER: Academic Press
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The interaction between Mo species and a conventionally microsized and particularly nanosized HZSM-5 support was studied by high-resoln. multinuclear solid-state NMR techniques. As proved by 27Al and 29Si MAS as well as CP/MASNMR studies, this interaction was so strong that the framework Al of both microsized and nanosized HZSM-5 zeolites could be extd. With increasing Mo loading, more nonframework Al, resonanced at .apprx.30 ppm, appeared in the 27Al MASNMR spectrum of the Mo-loaded **nanosized** HZSM-5 **catalyst**. Meanwhile, this strong interaction gave more new Al2(MoO4)3 crystallines on the nanosized HZSM-5 support than on the microsized HZSM-5 support. The appearance of Al2(MoO4)3 crystallines resulted in fewer active catalysts for the methane dehydro-aromatization. The results of 1H MASNMR using perfluorotributylamine as a probe mol. demonstrated that Mo species preferentially reacted with the silanols and nonframework AlOH on the external surface of microsized and nanosized HZSM-5 zeolites. Impregnated Mo species remained predominantly on the external surface of the nanosized HZSM-5 zeolite, although there was a possibility that they might migrate into the lattice channels of the microsized HZSM-5 zeolite. The migration of some Mo species into the zeolite channels might be beneficial for the conversion of methane to aroms. in the absence of O. (c) 1999 Academic Press.

REFERENCE COUNT: 39 THERE ARE 39 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2 ANSWER 3 OF 3 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1992:197430 CAPLUS
DOCUMENT NUMBER: 116:197430
TITLE: Microemulsion-mediated synthesis of nanosize **molybdenum** sulfide coal liquefaction catalysts
AUTHOR(S): Boakye, E.; Vaidyanathan, N.; Radovic, L. R.; Osseo-Asare, K.
CORPORATE SOURCE: Dep. Mater. Sci. Eng., Pennsylvania State Univ., University Park, PA, 16802, USA
SOURCE: Prepr. Pap. - Am. Chem. Soc., Div. Fuel Chem. (1992), 37(1), 298-305

CODEN: ACFPAI; ISSN: 0569-3772
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Nanosize Mo sulfide particles have been synthesized in 0.134 M NP-5/cyclohexane/water and 0.4 M NP-5/Tetralin/benzyl alc./water microemulsions. The particle size varies with the water-surfactant molar ratio. The synthesis of Mo sulfide in Tetralin has potentially important technol. applications since catalyst prepn. does not involve particle harvesting. Advantage can be taken of the variation of particle size with the water-to-surfactant molar ratio to make particles of desired sizes for coal liquefaction. Liquefaction tests conducted is so far have given high yields of hexane-sol. oils and the yield of oils is inversely proportional to particle size.

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NEWS 1		Web Page URLs for STN Seminar Schedule - N. America
NEWS 2	Jan 25	BLAST(R) searching in REGISTRY available in STN on the Web
NEWS 3	Jan 29	FSTA has been reloaded and moves to weekly updates
NEWS 4	Feb 01	DKILIT now produced by FIZ Karlsruhe and has a new update frequency
NEWS 5	Feb 19	Access via Tymnet and SprintNet Eliminated Effective 3/31/02
NEWS 6	Mar 08	Gene Names now available in BIOSIS
NEWS 7	Mar 22	TOXLIT no longer available
NEWS 8	Mar 22	TRCTHERMO no longer available
NEWS 9	Mar 28	US Provisional Priorities searched with P in CA/CAplus and USPATFULL
NEWS 10	Mar 28	LIPINSKI/CALC added for property searching in REGISTRY
NEWS 11	Apr 02	PAPERCHEM no longer available on STN. Use PAPERCHEM2 instead.
NEWS 12	Apr 08	"Ask CAS" for self-help around the clock
NEWS 13	Apr 09	BEILSTEIN: Reload and Implementation of a New Subject Area
NEWS 14	Apr 09	ZDB will be removed from STN
NEWS 15	Apr 19	US Patent Applications available in IFICDB, IFIPAT, and IFIUDB
NEWS 16	Apr 22	Records from IP.com available in CAPLUS, HCAPLUS, and ZCAPLUS
NEWS 17	Apr 22	BIOSIS Gene Names now available in TOXCENTER
NEWS 18	Apr 22	Federal Research in Progress (FEDRIP) now available

NEWS EXPRESS	February 1 CURRENT WINDOWS VERSION IS V6.0d, CURRENT MACINTOSH VERSION IS V6.0a(ENG) AND V6.0Ja(JP), AND CURRENT DISCOVER FILE IS DATED 05 FEBRUARY 2002
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NEWS INTER	General Internet Information
NEWS LOGIN	Welcome Banner and News Items
NEWS PHONE	Direct Dial and Telecommunication Network Access to STN
NEWS WWW	CAS World Wide Web Site (general information)

Enter NEWS followed by the item number or name to see news on that specific topic.

* * * * * * * * * * * * * * STN Columbus * * * * * * * * * * * * * * * *

FILE 'HOME' ENTERED AT 11:56:31 ON 12 MAY 2002

=> file caplus

COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	0.21	0.21

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FILE COVERS 1907 - 12 May 2002 VOL 136 ISS 20
FILE LAST UPDATED: 10 May 2002 (20020510/ED)

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```
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          2980 NANOSIZ?
        588247 CATALYST
        551461 CATALYSTS
        740761 CATALYST
                  (CATALYST OR CATALYSTS)
L1          55 NANOSIZ? (2A) CATALYST

=> s l1 and (chromium or tungesten or molybdenum)
        271938 CHROMIUM
            75 CHROMIUMS
        271943 CHROMIUM
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            12 TUNGESTEN
        174290 MOLYBDENUM
            34 MOLYBDENUMS
        174294 MOLYBDENUM
                  (MOLYBDENUM OR MOLYBDENUMS)
L2           3 L1 AND (CHROMIUM OR TUNGESTEN OR MOLYBDENUM)

=> d l2 ibib ab 1-3

L2   ANSWER 1 OF 3  CAPLUS  COPYRIGHT 2002 ACS
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                          molybdenum oxide/TiO2 for use with sunlight
INVENTOR(S):              Lee, Tae Kyu; Jeon, Myeong Seok; Ju, Hyeon Kyu
PATENT ASSIGNEE(S):       Korea Institute of Energy Research, S. Korea
SOURCE:                   Repub. Korean Kongkae Taeho Kongbo, No pp. given
                          CODEN: KRXXA7
DOCUMENT TYPE:            Patent
LANGUAGE:                 Korean
FAMILY ACC. NUM. COUNT:   1
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PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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L2 ANSWER 2 OF 3 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1999:813734 CAPLUS
DOCUMENT NUMBER: 132:137022
TITLE: Methane Dehydro-aromatization over Mo/HZSM-5 in the Absence of Oxygen: A Multinuclear Solid-State NMR Study of the Interaction between Supported Mo Species and HZSM-5 Zeolite with Different Crystal Sizes
AUTHOR(S): Zhang, Weiping; Ma, Ding; Han, Xiuwen; Liu, Xiumei; Bao, Xinhe; Guo, Xinwen; Wang, Xiangsheng
CORPORATE SOURCE: State Key Laboratory of Catalysis, Dalian Institute of Chemical Physics, Chinese Academy of Sciences, Dalian, 116023, Peop. Rep. China
SOURCE: Journal of Catalysis (1999), 188(2), 393-402
CODEN: JCTLA5; ISSN: 0021-9517
PUBLISHER: Academic Press
DOCUMENT TYPE: Journal
LANGUAGE: English

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REFERENCE COUNT: 39 THERE ARE 39 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2 ANSWER 3 OF 3 CAPLUS COPYRIGHT 2002 ACS
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DOCUMENT NUMBER: 116:197430
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AUTHOR(S): Boakye, E.; Vaidyanathan, N.; Radovic, L. R.; Osseo-Asare, K.
CORPORATE SOURCE: Dep. Mater. Sci. Eng., Pennsylvania State Univ., University Park, PA, 16802, USA
SOURCE: Prepr. Pap. - Am. Chem. Soc., Div. Fuel Chem. (1992), 37(1), 298-305

CODEN: ACFPAI; ISSN: 0569-3772
DOCUMENT TYPE: Journal
LANGUAGE: English
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```
=> s nanoparticl? size catalyst
         16406 NANOPARTICL?
        739815 SIZE
         97849 SIZES
        793624 SIZE
                 (SIZE OR SIZES)
        588247 CATALYST
        551461 CATALYSTS
        740761 CATALYST
                 (CATALYST OR CATALYSTS)
L3           0 NANOPARTICL? SIZE CATALYST
                 (NANOPARTICL?(W)SIZE(W)CATALYST)

=> s nanoparticl? size
         16406 NANOPARTICL?
        739815 SIZE
         97849 SIZES
        793624 SIZE
                 (SIZE OR SIZES)
L4         385 NANOPARTICL? SIZE
                 (NANOPARTICL?(W)SIZE)

=> s l4 and (chromium or tungesten or molybdenum)
        271938 CHROMIUM
            75 CHROMIUMS
        271943 CHROMIUM
                 (CHROMIUM OR CHROMIUMS)
            12 TUNGESTEN
        174290 MOLYBDENUM
            34 MOLYBDENUMS
        174294 MOLYBDENUM
                 (MOLYBDENUM OR MOLYBDENUMS)
L5           7 L4 AND (CHROMIUM OR TUNGESTEN OR MOLYBDENUM)

=> s l5 and l2
L6           0 L5 AND L2

=> s l5 not l2
L7           7 L5 NOT L2

=> d l7 ibib ab 1-7

L7   ANSWER 1 OF 7  CAPLUS  COPYRIGHT 2002 ACS
ACCESSION NUMBER:        2002:80944  CAPLUS
DOCUMENT NUMBER:         136:270375
TITLE:                   Angle-resolved nanosphere lithography: Manipulation of
                         nanoparticle size, shape, and
```

interparticle spacing

AUTHOR(S): Haynes, Christy L.; McFarland, Adam D.; Smith, Matthew T.; Hulteen, John C.; Van Duyne, Richard P.

CORPORATE SOURCE: Department of Chemistry, Northwestern University, Evanston, IL, 60208-3113, USA

SOURCE: Journal of Physical Chemistry B (2002), 106(8), 1898-1902
CODEN: JPCBFK; ISSN: 1089-5647

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

AB This work presents a novel approach to fine-tuning the size, shape, and interparticle spacing of nanoparticles fabricated by nanosphere lithog. (NSL). This approach, termed angle-resolved nanosphere lithog. (AR NSL), is a variant of NSL that yields vastly different, and increasingly flexible, nanostructures. This is accomplished by controlling the angle, .theta., between the surface normal of the sample assembly and the propagation vector of the material deposition beam. Comparison of exptl. results to simulated nanoparticle array geometries generated using an anal. model show excellent qual. agreement. Using AR NSL, the authors demonstrated that it is possible to reduce in-plane nanoparticle dimensions by a factor of 4. This important result shows that it will be possible to achieve fabrication of nanoparticles with precision control of their dimensions in a size regime comparable with the industry std. electron beam lithog. AR NSL provides a massively parallel, rather than serial, nanoparticle fabrication method. One limitation of the AR NSL technique is the inability to pattern an entire substrate with a single nanoparticle geometry without control of the mask domain orientation. While the presence of multiple domains in any given colloidal crystal mask complicates the fabrication of large-area homogeneous nanoparticle arrays, this quality is, in fact, useful in lab. scale expts. requiring a diverse set of nanostructure features on a single sample. The precision tuning of **nanoparticle size**, shape, and spacing that can be achieved in a massively parallel, materials/substrate general, and inexpensive fashion using AR NSL is likely to have significant impact on the fields of surface-enhanced spectroscopy, near field optical microscopy, nanoscopic object manipulation, and chem./biol. sensing.

REFERENCE COUNT: 42 THERE ARE 42 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 2 OF 7 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 2000:658591 CAPLUS

DOCUMENT NUMBER: 133:353380

TITLE: Size measurement and classification of ultrafine refractory metal particles produced by laser irradiation

AUTHOR(S): Kawakami, Yuji; Seto, Takafumi; Yamauchi, Yoshihiro; Ozawa, Eiichi

CORPORATE SOURCE: Vacuum Metallurgical Co., Ltd., Chiba, 289-1297, Japan

SOURCE: Reza Kenkyu (2000), 28(6), 365-369
CODEN: REKEDA; ISSN: 0387-0200

PUBLISHER: Reza Gakkai

DOCUMENT TYPE: Journal

LANGUAGE: Japanese

AB Refractory metal ultrafine particles were synthesized by the irradn. of two synchronized-pulse Nd:YAG lasers on a refractory metal substrate in a low pressure inert gas atm. A size distribution of the refractory metal ultrafine particles was measured by a low pressure differential mobility analyzer (LP-DMA) developed by ourselves for each pressure condition. The exptl. results showed the peak of the size distribution of W, Ta, and Mo particles was shifted from the several nm to the tens of nm level with increasing pressure. The ultrafine particles of a 10 nm-size (.sigma.g =

1.12) were precisely classified by the LP-DMA. We could control the shape of the particles from agglomeration condition to spherical one by using an elec. furnace. In conclusion, the size classification of narrow distribution and the shape of the generated ultrafine particles could be well controlled.

L7 ANSWER 3 OF 7 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 2000:316255 CAPLUS
DOCUMENT NUMBER: 133:81470
TITLE: The Discovery and Study of Nanocrystalline TiO2-(MoO3) Core-Shell Materials
AUTHOR(S): Elder, S. H.; Cot, F. M.; Su, Y.; Heald, S. M.; Tyryshkin, A. M.; Bowman, M. K.; Gao, Y.; Joly, A. G.; Balmer, M. L.; Kolwaite, Ana C.; Magrini, K. A.; Blake, D. M.
CORPORATE SOURCE: William R. Wiley Environmental Molecular Sciences Laboratory, Pacific Northwest National Laboratory, Richland, WA, 99352, USA
SOURCE: Journal of the American Chemical Society (2000), 122(21), 5138-5146
CODEN: JACSAT; ISSN: 0002-7863
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The authors report the synthesis of a series of new nanocryst. TiO2-(MoO3) core-shell materials whose photoabsorption energy (PE, the energy required to excite TiO2-core valence band electrons to MoO3-shell conduction band states) properties are correlated with both the **nanoparticle size** and the degree of chem. interaction between the TiO2 core and the MoO3 shell. The TiO2-(MoO3) **nanoparticle size** can be readily adjusted from 80 to 40 .ANG., and in this series, the PE decreases from 2.88 to 2.60 eV with decreasing particle size. The systematic PE red-shift exhibited by the core-shell materials is ascribed to the change in the relative position of the MoO3-shell conduction band as it evolves from less than a monolayer to a two monolayer shell.
REFERENCE COUNT: 109 THERE ARE 109 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 4 OF 7 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1999:147215 CAPLUS
DOCUMENT NUMBER: 130:185747
TITLE: Lipid-bilayer matrix with microporous vesicles for precipitation of unagglomerated metal nanoparticles at membrane interfaces
INVENTOR(S): Markowitz, Michael; Chow, Gan Moog; Singh, Alok
PATENT ASSIGNEE(S): United States Dept. of the Navy, USA
SOURCE: U.S., 10 pp.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5876480	A	19990302	US 1996-603296	19960220
US 6054495	A	20000425	US 1998-162148	19980929

PRIORITY APPLN. INFO.: US 1996-603296 19960220
OTHER SOURCE(S): MARPAT 130:185747
AB Metal powder of unagglomerated **nanoparticle size** is formed in org. membrane with unpolymd. vesicles having bilayers from a

lipid with catalytic metal ion, and another lipid with pos.-charged end group, and using aq. metalization bath contg. metal ions. The process is suitable for prepn. of nanosize particles (size 1-100 nm) of Au, Ag, Pd, Cu, Rh, Ru, Ni, Co, Pt, Fe, W, Cr, Mn, and/or Ti. The catalytic divalent ions of Pd, Co, Pt, Ni, or Rh (or Au3+) in aq. or polar solvent are typically dispersed with ionic bonding to unpolymd. vesicles of a lipid bilayer membrane, and the dispersion is modified by controlling the pH at 5-7 and then is mixed with the metalization bath. The resulting dispersion mixt. is held at controlled temp. for metalization to ppt. the nanosize metal particles, preferably followed by freeze drying for powder sepn. The resulting metal particles can be lyophilized to maintains the unagglomerated form. The Au nanoparticles of 18-26 nm size were formed by the process at 25.degree., obtaining the lyophilized product contg. .apprx.10% nanoparticles.

REFERENCE COUNT: 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 5 OF 7 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1998:996 CAPLUS

DOCUMENT NUMBER: 128:91668

TITLE: Experimental evidence of structural transition from fcc to bulk bcc in nanophase metal clusters of (Fe)n, (Cr)n, (Mo)n and (W)n produced by CO2 laser multiphoton decomposition of metal carbonyls

AUTHOR(S): Lee, G. H.; Huh, S. H.; Jung, H. I.

CORPORATE SOURCE: College of Natural Sciences, Department of Chemistry, Kyungpook National University, Taegu, 702-701, S. Korea

SOURCE: J. Mol. Struct. (1998), 440(1-3), 141-145
CODEN: JMOSB4; ISSN: 0022-2860

PUBLISHER: Elsevier Science B.V.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB We have produced nanophase metal clusters, (Fe)n, (Cr)n, (Mo)n and (W)n, by multiphoton decompn. of the corresponding metal carbonyls with a 10.6 .mu.m CO2 laser in the presence of Ar and SF6. The size distribution was narrow and the av. diam. was 6, 3.5, 2 and .apprx.1 nm for Fe, Cr, Mo and W clusters, resp. The structure was found to be bcc. for both Fe and Cr clusters, fcc. for Mo clusters, and amorphous for W clusters (note that all the bulk metals have bcc. structure). Considering the cluster sizes (9630, 1870, 230 and .apprx.30 for Fe, Cr, Mo and W clusters, resp.) estd. from their av. diams., it is likely that there exists a structural transition from fcc. to bulk bcc. with increasing cluster size in these metal clusters.

L7 ANSWER 6 OF 7 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1996:498541 CAPLUS

DOCUMENT NUMBER: 125:207462

TITLE: Moessbauer studies of amorphous Fe80-xCrxB20 nanoparticles

AUTHOR(S): Maknani, J.; Dormann, J. L.; Suber, L.; Fiorani, D.; Bensamka, F.

CORPORATE SOURCE: CNRS, LMOV, Meudon, 92195, Fr.

SOURCE: Conf. Proc. - Ital. Phys. Soc. (1996), 50(International Conference on the Applications of the Moessbauer Effect, 1995, Pt. 2), 477-480
CODEN: CPISEN; ISSN: 1122-1437

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Results of Moessbauer spectroscopy measurements, in the temp. range 4.2-600K, on Fe80-xCrxB20 amorphous fine powders are reported. In addn. to metallic Fe, Fe3+ and Fe2+ ions (at the particle surface and in the

smaller particles) are detected. The change of the relative populations of the different Fe species with the compn. x is related to the size and compn. distributions, detd. by TEM measurements. The results are in agreement with those obtained by magnetization measurements.

L7 ANSWER 7 OF 7 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1993:259173 CAPLUS
DOCUMENT NUMBER: 118:259173
TITLE: Narrowing sputtered **nanoparticle** **size** distribution
AUTHOR(S): Kaatz, F. H.; Chow, G. M.; Edelstein, A. S.
CORPORATE SOURCE: Mater. Sci. Technol. Div., Nav. Res. Lab., Washington, DC, 20375-5000, USA
SOURCE: J. Mater. Res. (1993), 8(5), 995-1000
CODEN: JMREEE; ISSN: 0884-2914
DOCUMENT TYPE: Journal
LANGUAGE: English
AB By adjusting the sputtering rate and gas pressure, it is possible to form nanoparticles of different sizes, phases, and materials. The spatial distribution of sputtered particle formation was studied using a vertical, linear arrangement of substrates. Collecting the particles soon after they are formed, before they have time to grow and agglomerate, allows one to obtain a narrow size distribution. In the case of **molybdenum** , a narrow distribution of cubic particles is formed at relatively large distances (8 cm) from the source. These cubic particles collide and self-assemble in the vapor into arrays of larger cubic particles. The particle size histograms are fitted to log-normal distribution functions. Supersatn. is discussed qual. as a function of the distance from the substrate, sputtering rate, and the mean free path in the vapor.

=> log y

COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	47.61	47.82

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE ENTRY	TOTAL SESSION
CA SUBSCRIBER PRICE	-6.20	-6.20

STN INTERNATIONAL LOGOFF AT 12:02:18 ON 12 MAY 2002

```
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PASSWORD:
TERMINAL (ENTER 1, 2, 3, OR ?):2


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 NEWS  1          Web Page URLs for STN Seminar Schedule - N. America
 NEWS  2  Jan 25  BLAST(R) searching in REGISTRY available in STN on the Web
 NEWS  3  Jan 29  FSTA has been reloaded and moves to weekly updates
 NEWS  4  Feb 01  DKILIT now produced by FIZ Karlsruhe and has a new update
                  frequency
 NEWS  5  Feb 19  Access via Tymnet and SprintNet Eliminated Effective 3/31/02
 NEWS  6  Mar 08  Gene Names now available in BIOSIS
 NEWS  7  Mar 22  TOXLIT no longer available
 NEWS  8  Mar 22  TRCTHERMO no longer available
 NEWS  9  Mar 28  US Provisional Priorities searched with P in CA/CAplus
                  and USPATFULL
 NEWS 10  Mar 28  LIPINSKI/CALC added for property searching in REGISTRY
 NEWS 11  Apr 02  PAPERCHEM no longer available on STN.  Use PAPERCHEM2 instead.
 NEWS 12  Apr 08  "Ask CAS" for self-help around the clock
 NEWS 13  Apr 09  BEILSTEIN: Reload and Implementation of a New Subject Area
 NEWS 14  Apr 09  ZDB will be removed from STN
 NEWS 15  Apr 19  US Patent Applications available in IFICDB, IFIPAT, and IFIUDB
 NEWS 16  Apr 22  Records from IP.com available in CAPLUS, HCAPLUS, and ZCAPLUS
 NEWS 17  Apr 22  BIOSIS Gene Names now available in TOXCENTER
 NEWS 18  Apr 22  Federal Research in Progress (FEDRIP) now available

 NEWS EXPRESS  February 1 CURRENT WINDOWS VERSION IS V6.0d,
               CURRENT MACINTOSH VERSION IS V6.0a(ENG) AND V6.0Ja(JP),
               AND CURRENT DISCOVER FILE IS DATED 05 FEBRUARY 2002
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 NEWS PHONE    Direct Dial and Telecommunication Network Access to STN
 NEWS WWW      CAS World Wide Web Site (general information)

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specific topic.

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=> s nanosized (4a) (chromium or molybdenum or tungesten)
          2006 NANOSIZED
        271938 CHROMIUM
            75 CHROMIUMS
        271943 CHROMIUM
                 (CHROMIUM OR CHROMIUMS)
        174290 MOLYBDENUM
            34 MOLYBDENUMS
        174294 MOLYBDENUM
                 (MOLYBDENUM OR MOLYBDENUMS)
            12 TUNGESTEN
L1          16 NANOSIZED (4A) (CHROMIUM OR MOLYBDENUM OR TUNGESTEN)

=> d l1 ibib ab 1-16

L1   ANSWER 1 OF 16  CAPLUS  COPYRIGHT 2002 ACS
ACCESSION NUMBER:        2002:257452  CAPLUS
TITLE:                   Formation mechanism of molybdenum and molybdenum oxide
                         nanoparticles by electron irradiation
AUTHOR(S):               Jia, Husheng; Xu, Bingshe; Fan, Yadi; Guo, Ruiping;
                         Tanaka, Shun-Ichiro
CORPORATE SOURCE:        College of Materials Science and Engineering, Taiyuan
                         University of Technology, Taiyuan, 030024, Peop. Rep.
                         China
SOURCE:                  Materials Research Society Symposium Proceedings
                         (2002), 676(Synthesis, Functional Properties and
                         Applications of Nanostructures), Y3.4.1-Y3.4.4
                         CODEN: MRSPDH; ISSN: 0272-9172
PUBLISHER:               Materials Research Society
DOCUMENT TYPE:           Journal
LANGUAGE:                English
AB   The mechanism of molybdenum and molybdenum oxide nanoparticles formation
     from molybdenum oxide microparticles by electron beam irradn. using a
     high-resoln. transmission electron microscope on a room-temp. stage have
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been investigated. It is found that, the microsized molybdenum oxide particles disintegrated to form **nanosized molybdenum** oxide particles by electron beam irradn. with an intensity of approx. 1021e/cm2 .cntdot. sec. The molybdenum nanoparticles were formed from molybdenum oxide nanoparticles upon further electron irradn. During the electron irradn. process, the surfaces and interfaces of molybdenum oxide nanoparticles suffered damage and defects, such as vacancy arrays showing hole like spots and a moire-like fringes in the lattice image due to oxygen loss, followed by a gradual change from molybdenum oxide to molybdenum nanoparticles. The phenomenon of **molybdenum** metal nanoparticle formation from **nanosized molybdenum** oxide is considered to be due to desorption of oxygen as a result of electron stimulation and at. displacement via the knock-on effect. It is suggested that electron irradn. is a powerful technique to create nanostructured metal, ceramic and semiconductor materials by at.-scale control.

REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L1 ANSWER 2 OF 16 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 2001:904416 CAPLUS
DOCUMENT NUMBER: 136:40031
TITLE: **Nanosized** particles of **molybdenum** sulfide and derivatives and uses thereof
INVENTOR(S): Migdal, Cyril A.; Stott, Paul E.; Bakunin, Victor N.; Parenago, Oleg P.; Kuz'mina, Galina N.; Vedeneeva, Ludmila M.; Suslov, Andrei Yu
PATENT ASSIGNEE(S): Crompton Corporation, USA
SOURCE: PCT Int. Appl., 70 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001094504	A2	20011213	WO 2001-US14982	20010508

W: AU, BR, CA, IN, JP, KP, KR, MX, RU, SG, US, ZA
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR

PRIORITY APPLN. INFO.: US 2000-208573P P 20000602
OTHER SOURCE(S): MARPAT 136:40031

AB A lubricant compn. is disclosed that comprises: (a) a lubricant and (b) at least one molybdenum-contg. compd. in the form of surface-capped nanosized particles of the general formula: (Z)n(X-R)m wherein Z is an inorg. moiety comprising molybdenum and sulfur in the form of particles having dimensions in the range of from .apprx.1 to .apprx.100 nm; (X-R) is a surface-capping reagent wherein R is a C4 to C20 straight or branched-chain alkyl or alkylated cycloalkyl radical or radicals and X is a functional group capable of specific sorption and/or chem. interaction with molybdenum/sulfur moiety; n is the no. of mols. of Z in the particles; m is an integer representing the amt. of surface-capping reagents relative to a single particle; and the ratio of m to n is in the range of from .apprx.1:1 to .apprx.10:1.

L1 ANSWER 3 OF 16 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 2001:450793 CAPLUS
DOCUMENT NUMBER: 135:220210
TITLE: Nanosized Ti-doped MoO3 thin films for gas-sensing application
AUTHOR(S): Guidi, V.; Boscarino, D.; Casarotto, L.; Comini, E.; Ferroni, M.; Martinelli, G.; Sberveglieri, G.

CORPORATE SOURCE: Dipartimento di Fisica, Universita di Ferrara, INFM, Ferrara, I-44100, Italy
SOURCE: Sensors and Actuators, B: Chemical (2001), B77(1-2), 555-560
CODEN: SABCEB; ISSN: 0925-4005
PUBLISHER: Elsevier Science B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Development of MoO3 as a novel material for gas sensing was addressed. Thin films were produced by reactive radiofrequency sputtering assisted by annealing. Doping with Ti was performed to enhance the conductance of the MoO3 film. It came out that the layers were two orders of magnitude more conductive than undoped material. Good and reversible response to CO was achieved at 300.degree., which fell off at higher temps. An interesting feature of the films was a considerably fast response for both CO and NO2 despite low operating temp. Doped films operate at best .apprx.100.degree. below than for pure MoO3 layers.

REFERENCE COUNT: 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L1 ANSWER 4 OF 16 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 2000:372082 CAPLUS
DOCUMENT NUMBER: 133:129183
TITLE: (NH4)15[H3Mo57V6(NO)6O189(H2O)12(VO)6].cntdot..apprx.60H2O: New Nanocompound Obtained by Chemical Embellishment of {M57V6}
AUTHOR(S): Yang, Wenbin; Lin, Xiang; Lu, Canzhong; Zhuang, Honghui; Huang, Jinshun
CORPORATE SOURCE: State Key Laboratory of Structure Chemistry Fujian Institute of Research on the Structure of Matter, Chinese Academy of Sciences, Fuzhou Fujian, 350002, Peop. Rep. China
SOURCE: Inorganic Chemistry (2000), 39(13), 2706-2707
CODEN: INOCAJ; ISSN: 0020-1669
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The compd. (NH4)15[H3Mo57V6(NO)6O189(H2O)12(VO)6].cntdot..apprx.60H2O with a nanosized anion was prepd. and its structure detd. by x-ray crystallog. The complex consists of the known {Mo57M6} framework with six {VO}3+ units added into the cavities. The complex is more accurately formulated as (NH4)15[{V(IV)(H2O)O}6{Mo(V)(.mu.3-O)2(.mu.-OH)Mo(V)}3{Mo(VI)15(MoNO)2O58(H2O)2}3{V(V)O}6].cntdot..apprx.60H2O. The basic shape of the anion is that of a torus with a 3-fold rotation axis. The structure was further verified by DT-TGA and 51V NMR and ESR spectral results.

REFERENCE COUNT: 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L1 ANSWER 5 OF 16 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 2000:324639 CAPLUS
DOCUMENT NUMBER: 132:339842
TITLE: Modeling of the DTG curves for oxidation of a **nanosized molybdenum** ferrite coupling mechanics and diffusion
AUTHOR(S): Nivoix, V.; Perriat, P.; Gillot, B.
CORPORATE SOURCE: Universite de Rouen, LASTSM, IUT, Mont Saint Aignan, 76821, Fr.
SOURCE: Journal of Thermal Analysis and Calorimetry (2000), 59(3), 847-858
CODEN: JTACF7; ISSN: 1418-2874
PUBLISHER: Kluwer Academic Publishers
DOCUMENT TYPE: Journal

LANGUAGE: English

AB From a model for isothermal oxidn. kinetics in nanosized ferrite spinels based on a diffusion-induced stress effect, the authors present a modeling of the DTG curves for the oxidn. of Fe2+ and Mo3+ cations on octahedral sites of a molybdenum ferrite. This has been made by considering that the chem. diffusion coeff. is given by the relation D=Do exp(-(E'a+pVa)/RT), when Do is a pre-exponential factor, E'a an activation energy and Va an activation energy induced by the oxidn.

REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L1 ANSWER 6 OF 16 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 2000:260348 CAPLUS

DOCUMENT NUMBER: 132:329115

TITLE: Preparation and characterization of SnO2 and MoOx-SnO2 nano-sized powders for thick film gas sensors: surface chemistry and electrical response to NO2

AUTHOR(S): Chiorino, A.; Ghiotti, G.; Prinetto, F.; Carotta, M. C.; Gallana, M.; Martinelli, G.

CORPORATE SOURCE: Dipartimento di Chimica IFM, Universita di Torino, Turin, I-10125, Italy

SOURCE: Sensors and Microsystems, Proceedings of the Italian Conference, 4th, Roma, Feb. 3-5, 1999 (2000), Meeting Date 1999, 131-142. Editor(s): Di Natale, Corrado; D'Amico, Arnaldo; Davide, Fabrizio. World Scientific Publishing Co. Pte. Ltd.: Singapore, Singapore. CODEN: 68UUAK

DOCUMENT TYPE: Conference

LANGUAGE: English

AB This work gives results about the properties of SnO2 nano-sized materials, prepd. via a sol-gel route, pure or added with Mo at two different Mo loading (1.8 and 4.7 Mo atoms %). FTIR spectroscopic and elec. measurements are employed on powders and films, resp., to obtain information on the electronic effects due to the molybdenum addn. FTIR spectra in air of the powders show that Mo lowers the intensity of the light scattered by free electrons and the intensity of a broad absorption, previously assigned to the photoionization of Vo+ [Vo+ + hv .fwdarw. Vo++ + e- (c.b.)]. Accordingly, elec. data show that molybdenum lowers the conductance of the films in air. FTIR spectroscopic and elec. measurements are employed on powders and films, resp., to obtain information on the electronic effects due to the molybdenum addn. Elec. measurements show that Mo in amt. of 1.8 atoms % lowers the ability to sense NO2 of films fired at 650.degree. and leaves almost unaltered those of films fired at 850.degree.. At variance Mo in amt. of 4.7 atoms % leaves almost unaltered the ability to sense NO2 of films fired at 650.degree. and enhances the ability to sense NO2 of films fired at 850.degree.. The sensing temp. of max. response for all materials is in any case 150.degree.. FTIR spectroscopy was employed to carefully study the nature of surface species formed by NO2/O2 interaction with the three materials and their stability at the working temp. The authors attained the spectroscopic demonstration that on the surface of sample added with 4.7 Mo atoms % the mechanism of nitrate formation is completely different from that occurring both on pure and on added with 1.8 Mo atoms % materials. FTIR spectroscopy was also employed to obtain information on the Mo species present on the surface of the materials after treatments in oxygen and on how they are affected in presence of the testing gas.

REFERENCE COUNT: 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L1 ANSWER 7 OF 16 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 2000:152333 CAPLUS

DOCUMENT NUMBER: 132:282501

TITLE: Crystallography and morphology of nanosized Cr particles in a Cu-0.2% Cr alloy
AUTHOR(S): Fujii, T.; Nakazawa, H.; Kato, M.; Dahmen, U.
CORPORATE SOURCE: National Center for Electron Microscopy, Lawrence Berkeley National Laboratory, Berkeley, CA, USA
SOURCE: Acta Materialia (2000), 48(5), 1033-1045
CODEN: ACMAFD; ISSN: 1359-6454
PUBLISHER: Elsevier Science Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The crystallog. and morphol. of nanosized Cr ppt. particles in a Cu matrix were examd. using Cu-0.20% Cr alloy aged at 773 K. By HRTEM observations, the Cr particles were found to have the bcc. structure even for sizes smaller than 10 nm. The orientation relationships between the fine Cr particles and the Cu matrix were analyzed by observing Moire fringes. Two distinct orientation relationships were found: one close to the Kurdjumov-Sachs relation and the other close to the Nishiyama-Wassermann relation. The particles exhibited major facet planes: (533)f/(134)b for the Kurdjumov-Sachs particles and (533)f/(035)b for the Nishiyama-Wassermann particles. The relative stability of the two types of Cr particles is discussed by adopting the invariant-line concept and the eigenvectors of the transformation.

REFERENCE COUNT: 28 THERE ARE 28 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L1 ANSWER 8 OF 16 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1999:791602 CAPLUS
DOCUMENT NUMBER: 132:8504
TITLE: Preparation and characterization of SnO2 and MoOx-SnO2 nanosized powders for thick film gas sensors
AUTHOR(S): Chiorino, A.; Ghiotti, G.; Prinetto, F.; Carotta, M. C.; Gnani, D.; Martinelli, G.
CORPORATE SOURCE: Dipartimento di Chimica I.F.M., Universita di Torino, Turin, I-10125, Italy
SOURCE: Sensors and Actuators, B: Chemical (1999), B58(1-3), 338-349
CODEN: SABCEB; ISSN: 0925-4005
PUBLISHER: Elsevier Science S.A.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB This work gives results about the characterization of SnO2 materials, prepd. via the sol-gel route, pure and Mo6+-added. The materials were characterized as powders or thick films using a variety of techniques. The morphol. of the powders was analyzed by XRD, SEM, TEM and HRTEM, their texture by volumetric measurements. The morphol. of the thick films was analyzed by SEM. The goal of obtaining powders and films made by regularly shaped and nanosized (30 50 nm) particles, even after thermal treatments at 850.degree. is attained. FTIR spectroscopic and elec. measurements were employed on powders and films, resp., to obtain information on the electronic effect due to the molybdenum addn. FTIR results show that Mo lowers the intensity of the light scattered by free electrons and the intensity of a broad absorption, previously assigned to the photoionization of VO+[VO+ + hv .fwdarw. VO2+ + e- (c.b.)]. Accordingly, elec. data show that molybdenum markedly lowers (of .apprx.2 orders of magnitude) the conductance of the films in air. Elec. measurements show that Mo lowers the response of tin oxide towards CO, but leaves almost unaltered or enhances its ability to sense NO2, depending on the thermal pretreatments. Both pure and Mo-added materials treated at 650.degree. show the same response to NO2. However, for the pure material treated at 850.degree. the response to NO2 is halved, while it is almost unaffected by the thermal treatment on the Mo-added materials. The sensing temp. of max. response is in any case 150.degree.. FTIR

spectroscopy was also employed to obtain information on the Mo species present on the surface of the materials after treatments in oxygen and on how they are affected in the presence of the different testing gases. Also surface species formed by NO2 interaction were carefully studied.
REFERENCE COUNT: 20 THERE ARE 20 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L1 ANSWER 9 OF 16 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1999:428090 CAPLUS
DOCUMENT NUMBER: 131:178888
TITLE: Rapid and simple isolation of the crystalline molybdenum-blue compounds with discrete and linked nanosized ring-shaped anions. Na15[MoVI126MoV28O462H14(H2O)70]0.5[MoVII124MoV28O457H14(H2O)68]0.5..apprxeq.400H2O and Na22[MoVI118MoV28O442H14(H2O)58]..apprxeq.250H2O
AUTHOR(S): Muller, Achim; Das, Samar K.; Fedin, Vladimir P.; Krickemeyer, Erich; Beugholt, Christian; Bogge, Hartmut; Schmidtmann, Marc; Hauptfleisch, Bjorn
CORPORATE SOURCE: Fakultat Chemie, Univ. Bielefeld, Bielefeld, D-33501, Germany
SOURCE: Zeitschrift fuer Anorganische und Allgemeine Chemie (1999), 625(7), 1187-1192
CODEN: ZAACAB; ISSN: 0044-2313
PUBLISHER: Wiley-VCH Verlag GmbH
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The blue mixed-crystal title compd. Na15[MoVI126MoV28O462H14(H2O)70]0.5[MoVI124MoV28O457H14(H2O)68]0.5..apprxeq.400H2O {Na15[I]0.5[II]0.5..apprxeq.400 H2O} (III), which crystallizes in the triclinic space group P.hivin.1 (a = 30.785(2), b = 32.958(2), c = 47.318(3) .ANG., .alpha. = 90.53(1), .beta. = 89.86(1), .gamma. = 96.85(1).degree., V = 47665(6) .ANG.3, Z = 2, Dcalc = 2.149 g cm-3, 41,660 obsd. reflections with Fo > 4.sigma.(Fo), 4441 refined parameters, R1 = 0.128, wR2 = 0.276), ppts. within 1 day when an acidic (pH .apprxeq. 1) aq. soln. of Na molybdate (because of the extremely high soly. of the reaction product used in relatively high concn.) is reduced by Na2S2O4. Compd. III contains hitherto unknown pure **molybdenum**-oxide based, **nanosized**, ring-shaped, crystallog. independent cluster anions of the type {Mo154} I and {Mo152} II, the lacunary-type analog of I. Using the same reducing agent but in the presence of a reagent with a high affinity to the specific {Mo2}-type building unit (also a leaving group) of I, such as formic acid, the compd. Na22[MoVI118MoV28O442H14(H2O)58]..apprxeq.250H2O (space group P.hivin.1, a = 24.724(1), b = 35.726(2), c = 44.608(3) .ANG., .alpha. = 93.25(1), .beta. = 93.51(1), .gamma. = 106.72(1).degree., V = 37552(4) .ANG.3, Z = 2, Dcalc = 2.401 g cm-3, 60,931 obsd. reflections with Fo > 4.sigma.(Fo), 4012 refined parameters, R1 = 0.083, wR2 = 0.204) is obtained in which the giant rings, having 4 missing {Mo2} units compared to I, are linked to chains. Until now, similar chain-type compds. could only be obtained using a non-well-defined synthetic method.
REFERENCE COUNT: 27 THERE ARE 27 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L1 ANSWER 10 OF 16 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1999:342159 CAPLUS
DOCUMENT NUMBER: 131:119104
TITLE: Preparation of nanosized Mo powder by microwave plasma chemical vapor deposition method
AUTHOR(S): Liu, Binghai; Gu, Hongchen; Chen, Qilin
CORPORATE SOURCE: Institute of Technical Physics and Chemistry, East China University of Science and Technology, Shanghai, 200237, Peop. Rep. China

SOURCE: Materials Chemistry and Physics (1999), 59(3), 204-209
CODEN: MCHPDR; ISSN: 0254-0584
PUBLISHER: Elsevier Science S.A.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB In this study, **nanosized molybdenum** powder was synthesized by the microwave plasma chem. vapor deposition (MPCVD) method, a novel chem. synthesis technol. The mechanism of the MPCVD process and the effects of some processing parameters on the characteristics of Mo powder were studied. The results show that the mean particle size depends greatly on the output power of microwave, the flow rate of plasma forming gas, the flow rate of the carrier gas and the feeding rate of raw materials. The ratio of the flow rate of the carrier gas (K) to the feeding rate of raw materials (V) is the main factor that has great influence on the particle size distribution.

REFERENCE COUNT: 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L1 ANSWER 11 OF 16 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1999:333810 CAPLUS
DOCUMENT NUMBER: 131:138338
TITLE: Assembling nanosized ring-shaped synthons to an anionic layer structure based on the synergetically induced functional complementarity of their surface-sites: Na21[MoVI126MoV28O462H14(H2O)54(H2PO2)7].cntdot.xH2O (x .apprxeq. 300)
AUTHOR(S): Muller, Achim; Das, Samar K.; Bogge, Hartmut; Beugholt, Christian; Schmidtmann, Marc
CORPORATE SOURCE: Fakultat fur Chemie, Universitat Bielefeld, Bielefeld, D-33501, Germany
SOURCE: Chemical Communications (Cambridge) (1999), (11), 1035-1036
CODEN: CHCOFS; ISSN: 1359-7345
PUBLISHER: Royal Society of Chemistry
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The reaction of an aq. soln. of sodium molybdate with hypophosphorous (phosphinic) acid acting both as reducing agent and ligand at low pH values (.apprxeq.1) gave nanosized ring-shaped cluster units which assemble to form layers of the compd. Na21[MoVI126MoV28O462H14(H2O)54(H2PO2)7].cntdot.xH2O (1, x .apprxeq. 300), which was characterized by x-ray crystallog. (orthorhombic, space group Cmca, R = 0.0735). In 1 the assemblage is based on the synergetically induced functional complementarity of amphiphilic O:MoL (L = H2O, H2PO2-) groups and corresponds to the replacement of H2O ligands of rings by related terminal Mo:O groups of other rings (and vice versa), the nucleophilicity of which is induced by coordinated H2PO2- ligands.

REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L1 ANSWER 12 OF 16 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1999:312359 CAPLUS
DOCUMENT NUMBER: 131:67246
TITLE: Preparation and characterization of SnO2 and MoOx-SnO2 nano-sized powders for thick film gas sensors
AUTHOR(S): Chiorino, A.; Ghiotti, G.; Prinetto, F.; Carotta, M. C.; Gnani, D.; Martinelli, G.
CORPORATE SOURCE: Dipartimento di Chimica I.F.M., Universita di Torino, Turin, 10125, Italy
SOURCE: Eurosensors XII, Proceedings of the 12th European Conference on Solid-State Transducers and the 9th UK Conference on Sensors and Their Applications,

Southampton, UK, Sept. 13-16, 1998 (1998), Volume 1, 657-660. Editor(s): White, N. M. Institute of Physics Publishing: Bristol, UK.
CODEN: 67PNAZ

DOCUMENT TYPE: Conference
LANGUAGE: English

AB This work gives preliminary results on a newly prepd. SnO2 powder, via sol gel route, and on the same material added with Mo6+. Morphol., elec. and IR spectroscopic results obtained on the powd. materials and on thick films give encouraging information. The goal of obtaining nano-sized powders with regularly shaped particles, resistant to thermal treatments is attained, as TEM on powders and SEM on films indicate. FTIR spectroscopy was employed to obtain information on the electronic effect due to the molybdenum addn. in oxygen and in presence of different gases (CO, NO and NO2). The FTIR results and the elec. data show that molybdenum lowers the response of tin oxide towards reducing gases and makes it able to sense NO2 as an oxidizing gas, that lowers its electronic concn.

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L1 ANSWER 13 OF 16 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1999:311600 CAPLUS
DOCUMENT NUMBER: 131:109441
TITLE: Preparation and physical properties of nanosized semiconducting CrSi2 powders
AUTHOR(S): Lu, Jinshan; Yang, Haibin; Liu, Bingbing; Han, Jie; Zou, Guangtian
CORPORATE SOURCE: National Lab of Superhard Materials, Jilin University, Changchun, 130023, Peop. Rep. China
SOURCE: Materials Chemistry and Physics (1999), 59(2), 101-106
CODEN: MCHPDR; ISSN: 0254-0584
PUBLISHER: Elsevier Science S.A.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB **Nanosized chromium** disilicide (CrSi2) powder was prepd. by the arc plasma method and a subsequent purifn. process. The as-prepd. CrSi2 powder was characterized by x-ray powder diffraction and TEM. The crystal structure of the powder was also confirmed with IR spectroscopy. The thermal stability of powders were studied from room temp. to 1000.degree. in air and in a helium atm., indicating that even in the nanosize region this disilicide powder was stable up to 720.degree. in air. Anal. of its photovoltage spectra shows that there exist two direct interband transitions in nanosized CrSi2 grains at 0.782 and 1.148 eV, resp.

REFERENCE COUNT: 40 THERE ARE 40 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L1 ANSWER 14 OF 16 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1998:136439 CAPLUS
DOCUMENT NUMBER: 128:224321
TITLE: Electrical properties of nanosized non-barrier inhomogeneities in Zn-based metal-semiconductor contacts in InP
AUTHOR(S): Clausen, Thomas; Leistiko, Otto
CORPORATE SOURCE: Mikroelektronik Centret, Technical University Denmark, Lyngby, 2800, Den.
SOURCE: Appl. Surf. Sci. (1998), 123/124, 567-570
CODEN: ASUSEE; ISSN: 0169-4332
PUBLISHER: Elsevier Science B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The authors have found that the elec. properties of carriers across the metal-semiconductor interface for alloyed Zn based metalizations to n- and p-InP are dominated by nanosized non-barrier inhomogeneities. The effective area covered by the nanosized regions is a small fraction of the contact area resulting in high values of the specific contact resistance to p-InP. For n--InP, thermionic emission across nanosized inhomogeneities dominates the carrier flow when Tann > 440.degree.C.

L1 ANSWER 15 OF 16 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1996:532893 CAPLUS
DOCUMENT NUMBER: 125:172368
TITLE: Preparation of nano-sized amorphous molybdenum dioxide powders by use of .gamma.-ray radiation method
AUTHOR(S): Liu, Y.; Qian, Y.; Zhang, M.; Chen, Z.; Wang, C.
CORPORATE SOURCE: Dep. Applied Chem., Structural Res. Lab., Univ. Sci., Tech. China, Anhui, 230026, Peop. Rep. China
SOURCE: Mater. Res. Bull. (1996), 31(8), 1029-1033
CODEN: MRBUAC; ISSN: 0025-5408
DOCUMENT TYPE: Journal
LANGUAGE: English
AB **Nanosized** amorphous **molybdenum** dioxide powders were prepd. by using .gamma.-ray radiation in ambient pressure and room temp. XPS and x-ray powder diffraction pattern of crystd. sample reveal the powders are monoclinic phase of molybdenum dioxide. Transmission electron micrographs show the av. particle size is 16 nm, and the distribution of particles is 8-30 nm.

L1 ANSWER 16 OF 16 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1993:181805 CAPLUS
DOCUMENT NUMBER: 118:181805
TITLE: Magnetic properties of nano-sized BCC alloys prepared by ball milling
AUTHOR(S): Kuwano, Hisashi; Morita, Hiroyuki; Hamaguchi, Yoshikazu; Ouyang, Hao; Fultz, Brent
CORPORATE SOURCE: Dep. Mater. Sci. Eng., Muroran Inst. Technol., Muroran, 050, Japan
SOURCE: Funtai oyobi Funmatsu Yakin (1992), 39(12), 1080-4
CODEN: FOFUA2; ISSN: 0532-8799
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Three bcc. metals and an alloy (Cr, Mo, W, Cr-Fe) were ball-milled by tungsten carbide, carbon steel and stainless steel vial/balls to prep. nanosized materials of grain sizes of 5.5-17 nm. Moessbauer spectroscopy, magnetization, and x-ray diffraction measurements were performed. A presence of the grain boundary component and the cryst. component of the Fe hyperfine field was confined for the bcc. nanocrystallites studied. The av. hyperfine fields of these two components were independent of the materials studied, and independent of temp. down to about 20 K. A significant redn. in the magnetic moment of Fe occurred in the nanosized Cr-20 at% Fe.

```
=> s nanosized (4a) (Cr or Mo or W)
         2006 NANOSIZED
       347262 CR
         1244 CRS
       348089 CR
                (CR OR CRS)
       405329 MO
        35037 MOS
       437866 MO
                (MO OR MOS)
```

326924 W
L2 17 NANOSIZED (4A) (CR OR MO OR W)

=> s l2 not l1
L3 14 L2 NOT L1

=> s l3 and nanoparticl?
16406 NANOPARTICL?
L4 2 L3 AND NANOPARTICL?

=> s l4 ibib ab 1-2
MISSING OPERATOR L4 IBIB
The search profile that was entered contains terms or
nested terms that are not separated by a logical operator.

=> d l4 ibib ab 1-2

L4 ANSWER 1 OF 2 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 2001:362935 CAPLUS
DOCUMENT NUMBER: 135:8407
TITLE: Development of coating technologies using **nanoparticles**
AUTHOR(S): Mihara, Yasuo; Oda, Masaaki; Hayashi, Chikara
CORPORATE SOURCE: ULVAC-Vacuum Metallurgical Co., Ltd., USA
SOURCE: Proceedings of International Conference on Vacuum Web Coating, 14th, Reno, NV, United States, Oct. 25-27, 2000 (2000), 46-61. Editor(s): Bakish, R. Bakish Materials Corp.: Englewood, N. J.
CODEN: 69BFO3
DOCUMENT TYPE: Conference; General Review
LANGUAGE: English
AB A review with 15 refs. Two kinds of coating technologies are presented using **nanoparticles**; one is based on the gas deposition method (GDM), and the other uses solns. contg. **nanoparticles**. Based on the GDM method, a jet-printing system (JPS) was developed for the deposition of metallic films for industrial applications. The formation of **nanosized W** films by laser irradn. was studied; the particle distribution was analyzed using the low-pressure differential-mobility analyzer. For the deposition of ceramic particles, an aerosol JPS system was developed where the evapn. chamber is replaced by an aerosol chamber contg. a mixt. of gas and fine ceramic powders. Generally, the advantages of the JPS are that it is a clean, dry, mask-less, low-temp. process. The film deposition method using solns. or pastes of dispersed **nanoparticles** was applied to prep. metal films of Cu, Ag, and Au by dip-coating of the substrates followed by baking in air at 300.degree. for 30 min. The technique was used for the repairing of flat-panel displays and for the Cu metalization of ultralarge scale-integrated circuits.
REFERENCE COUNT: 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 2 OF 2 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 2000:637907 CAPLUS
DOCUMENT NUMBER: 133:340890
TITLE: Silica **nanoparticles** prepared by W/O microemulsion method at acid/base conditions
AUTHOR(S): Kang, Dong-Gil; Kim, Ki-Do; Kim, Hee-Taik
CORPORATE SOURCE: Department of Chemical Engineering, Hanyang University, Ansan, 425-791, S. Korea
SOURCE: Kongop Hwahak (2000), 11(5), 500-504
CODEN: KOHWE9; ISSN: 1225-0112
PUBLISHER: Korean Society of Industrial and Engineering Chemistry

DOCUMENT TYPE: Journal
LANGUAGE: Korean
AB In this paper, we obtained **nanosized** silica particles in **W**/O microemulsion by reaction of tetra-Et orthosilicate, using either NH3, HCl or HNO3 as a catalyst. When a base catalyst (NH3) was used, silica particles had a mean size of 10.5 nm. As water concn. increased, the size of silica decreased, while it increased with increasing NH3 concn. Through the ternary phase diagram it was confirmed that HNO3-based microemulsion has higher water soly. than HCl-based microemulsion at high temp. With increasing temp., the mean size of HNO3-based silica particle increased, but the mean size of HCl-based silica particles increased until 25 .degree.C and decreased slowly thereafter. The yield was higher with HCl as a catalyst than with HNO3 and a perfect yield of 100% was obtained at 40 .degree.C.

=> d his

(FILE 'HOME' ENTERED AT 11:04:27 ON 12 MAY 2002)

FILE 'CAPLUS' ENTERED AT 11:04:36 ON 12 MAY 2002
L1 16 S NANOSIZED (4A) (CHROMIUM OR MOLYBDENUM OR TUNGESTEN)
L2 17 S NANOSIZED (4A) (CR OR MO OR W)
L3 14 S L2 NOT L1
L4 2 S L3 AND NANOPARTICL?

=> s l3 not l4
L5 12 L3 NOT L4

=> s l5 ibib ab 1-12
MISSING OPERATOR L5 IBIB
The search profile that was entered contains terms or
nested terms that are not separated by a logical operator.

=> d l5 ibib ab 1-12

L5 ANSWER 1 OF 12 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 2002:239159 CAPLUS
TITLE: Effect of nanosized powders on the structure and properties of electrospark alloyed coatings
AUTHOR(S): Levashov, E. A.; Malochkin, O. V.; Kudryashov, A. E.; Schentrunk, R.; Gammel, F.
CORPORATE SOURCE: SHS-Center, Moscow Steel and Alloys Institute, Moscow, 117936, Russia
SOURCE: Journal of Materials Synthesis and Processing (2001), 9(4), 199-206
CODEN: JMSPEI; ISSN: 1064-7562
PUBLISHER: Kluwer Academic/Plenum Publishers
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The influence of **nanosized** additives ZrO2, Al2O3, **W**, WC, WC-Co, NbC, Si3N4 on mass transfer of the SHS electrode material of the Ti-Cr-Ni-C system (SHIM-3B alloy trade mark) is considered. The thickness, continuity, and microhardness of the electrospark coatings alloyed onto the nickel alloy, as well as the coating structure, wear resistance, and the nanosized powder distribution in the coating have been studied. The coatings obtained have been subjected to X-ray anal. An optimum performance regime of the ALIER-METAL setup for high-frequency electrospark alloying has been detd. It has been found that addn. of nanosized powders to the electrode material facilitates thickening of the electrospark alloying (ESA) coatings and improvement of their continuity, hardness, and wear resistance.

REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 2 OF 12 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 2000:740116 CAPLUS
DOCUMENT NUMBER: 133:339387
TITLE: Heterogeneous photocatalytic reaction of **Cr** (VI) reduction on **nanosized** titania
AUTHOR(S): Zhang, Qing-Hong; Gao, Lian; Guo, Jing-Kun
CORPORATE SOURCE: The State Key Laboratory of High Performance Ceramics and Superfine Microstructure, Shanghai Institute of Ceramics, Chinese Academy of Sciences, Shanghai, 200050, Peop. Rep. China
SOURCE: Gaodeng Xuexiao Huaxue Xuebao (2000), 21(10), 1547-1551
CODEN: KTHPDM; ISSN: 0251-0790
PUBLISHER: Gaodeng Jiaoyu Chubanshe
DOCUMENT TYPE: Journal
LANGUAGE: Chinese
AB The influences of the pH value of solns., initial concns. of chromate, purged gas and photocatalysts loading on clean-up efficiency for Cr(VI) have been investigated. In order to study the influence of phase and size effect on the photocatalytic activities, anatase and rutile TiO2 nanocrystallites were prepd., whose particle size is 9.5 nm (BET surface area 133.4 m2.g) for anatase phase and 7.5 nm (BET surface area 167.6 m2/g) for rutile phase, resp. The results of the photocatalytic reactions indicate that the photocatalytic activity of anatase crystallite is higher than that of rutile crystallite, however, both anatase and rutile nanosized TiO2 powders have higher photocatalytic activities than those of com. TiO2 powder.

L5 ANSWER 3 OF 12 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 2000:703679 CAPLUS
DOCUMENT NUMBER: 133:353499
TITLE: Specific features of phase formation in **nanosized** Fe-**W** compositions
AUTHOR(S): Novakova, A. A.; Kiseleva, T. Yu.; Levina, V. V.
CORPORATE SOURCE: Mosk. Gos. Univ. im. M. V. Lomonosova, Moscow, Russia
SOURCE: Zhurnal Neorganicheskoi Khimii (2000), 45(8), 1388-1393
CODEN: ZNOKAQ; ISSN: 0044-457X
PUBLISHER: MAIK Nauka/Interperiodica Publishing
DOCUMENT TYPE: Journal
LANGUAGE: Russian
AB Phase and intermetallic phase formation in **nanosized** Fe-**W** compns. was evaluated.

L5 ANSWER 4 OF 12 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 2000:456266 CAPLUS
DOCUMENT NUMBER: 133:98693
TITLE: Preparation and characterisation of titanium-tungsten sensors
AUTHOR(S): Guidi, V.; Boscarino, D.; Comini, E.; Faglia, G.; Ferroni, M.; Malagu, C.; Martinelli, G.; Rigato, V.; Sberveglieri, G.
CORPORATE SOURCE: Department of Physics, University of Ferrara and INFM, Ferrara, 44100, Italy
SOURCE: Sensors and Actuators, B: Chemical (2000), B65(1-3), 264-266
CODEN: SABCEB; ISSN: 0925-4005
PUBLISHER: Elsevier Science S.A.
DOCUMENT TYPE: Journal

LANGUAGE: English
AB Thin films of W-Ti-O mixed oxides were prepd. by reactive r.f. sputtering of various Ti/W targets. Depending on the Ti/**W** content and annealing temp., **nanosized** films with different polycryst. structure were achieved. The layers exhibit good sensing capability to NO2 with scarce influence by CO.
REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 5 OF 12 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 2000:449165 CAPLUS
DOCUMENT NUMBER: 133:138998
TITLE: Electron microscopy and Rutherford backscattering study of nucleation and growth in **nanosized** **W**-Ti-O thin films
AUTHOR(S): Ferroni, M.; Guidi, V.; Martinelli, G.; Comini, E.; Sberveglieri, G.; Boscarino, D.; Della Mea, G.
CORPORATE SOURCE: Dipartimento di Fisica and INFM Universita di Ferrara, Ferrara, I-44100, Italy
SOURCE: Journal of Applied Physics (2000), 88(2), 1097-1103
CODEN: JAPIAU; ISSN: 0021-8979
PUBLISHER: American Institute of Physics
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Structural characterization of **nanosized** **W**-Ti-O r.f. magnetron-sputtered films was carried out by using electron microscopy techniques and Rutherford backscattering spectroscopy. Evolution of the W-Ti-O films turned out to be quite complex as several nanophases were detd. Depending on annealing temp., W/Ti ratio and stable nanophases of WO3, TiO, and TiO2 have been reliably achieved. The investigation highlighted the reason why the films remained nanostructured in spite of a relatively high annealing temp. In fact, formation of a dispersed TiO nanophase in the W-Ti-O layers inhibited grain growth and promote secondary recrystn. This behavior resulted in exaggerated growth of WO3 crystallites over the nanostructured layers.

L5 ANSWER 6 OF 12 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1999:813734 CAPLUS
DOCUMENT NUMBER: 132:137022
TITLE: Methane Dehydro-aromatization over Mo/HZSM-5 in the Absence of Oxygen: A Multinuclear Solid-State NMR Study of the Interaction between Supported Mo Species and HZSM-5 Zeolite with Different Crystal Sizes
AUTHOR(S): Zhang, Weiping; Ma, Ding; Han, Xiuwen; Liu, Xiumei; Bao, Xinhe; Guo, Xinwen; Wang, Xiangsheng
CORPORATE SOURCE: State Key Laboratory of Catalysis, Dalian Institute of Chemical Physics, Chinese Academy of Sciences, Dalian, 116023, Peop. Rep. China
SOURCE: Journal of Catalysis (1999), 188(2), 393-402
CODEN: JCTLA5; ISSN: 0021-9517
PUBLISHER: Academic Press
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The interaction between Mo species and a conventionally microsized and particularly nanosized HZSM-5 support was studied by high-resoln. multinuclear solid-state NMR techniques. As proved by 27Al and 29Si MAS as well as CP/MASNMR studies, this interaction was so strong that the framework Al of both microsized and nanosized HZSM-5 zeolites could be extd. With increasing Mo loading, more nonframework Al, resonanced at .apprx.30 ppm, appeared in the 27Al MASNMR spectrum of the **Mo** -loaded **nanosized** HZSM-5 catalyst. Meanwhile, this strong interaction gave more new Al2(MoO4)3 crystallines on the nanosized HZSM-5

support than on the microsized HZSM-5 support. The appearance of Al2(MoO4)3 crystallines resulted in fewer active catalysts for the methane dehydro-aromatization. The results of 1H MASNMR using perfluorotributylamine as a probe mol. demonstrated that Mo species preferentially reacted with the silanols and nonframework AlOH on the external surface of microsized and nanosized HZSM-5 zeolites. Impregnated Mo species remained predominantly on the external surface of the nanosized HZSM-5 zeolite, although there was a possibility that they might migrate into the lattice channels of the microsized HZSM-5 zeolite. The migration of some Mo species into the zeolite channels might be beneficial for the conversion of methane to aroms. in the absence of O. (c) 1999 Academic Press.

REFERENCE COUNT: 39 THERE ARE 39 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 7 OF 12 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1999:693117 CAPLUS

DOCUMENT NUMBER: 131:345516

TITLE: Thermal behavior and cation distribution in **nanosized Mo**-Co ferrite spinels Mo0.5CoyFe2.5-yO4 (0 .ltoreq. y .ltoreq. 1) studied by DTG, FT-IR and DC conductivity

AUTHOR(S): Gillot, B.; Lorimier, J.; Bernard, F.; Nivoix, V.; Douard, S.; Tailhades, Ph.

CORPORATE SOURCE: Laboratoire de Recherche sur la Reactivite des Solides, UMR CNRS, Dijon, 21011, Fr.

SOURCE: Materials Chemistry and Physics (1999), 61(3), 199-206 CODEN: MCHPDR; ISSN: 0254-0584

PUBLISHER: Elsevier Science S.A.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB A cobalt content varying in a large domain of compn. (0 .ltoreq. y .ltoreq. 1) was studied by x-ray diffraction, IR spectroscopy, thermal analyses (DTG and DSC) and elec. cond. Because of their small crystallite size (.apprx.40 nm), these ferrites can be oxidized 100-500.degree. while retaining the spinel structure. Based essentially on a quant. detn. of the cation distribution on the octahedral (B) and tetrahedral (A) sites by deriv. TG (DTG), FeB2+, MoB3+, MoB4+ and FeA2+ are successively oxidized into Fe3+ and Mo6+ ions. Also, for high cobalt content, stoichiometric spinels have a low proportion of these ions in valency state 3+. FTIR spectroscopy indicated, as a result of the oxidn. in cation-deficient spinels, the change in the coordination around Mo6+ ions from A to B-sites with cobalt substitution. The cond. evolution during oxidn. also was related to the change in the cation distribution occurring for high cobalt content causing the hopping mechanism to be destroyed.

REFERENCE COUNT: 24 THERE ARE 24 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 8 OF 12 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1999:646758 CAPLUS

DOCUMENT NUMBER: 132:14499

TITLE: Effect of heat-treatment on the nanostructural change of W-Cu powder prepared by mechanical alloying

AUTHOR(S): Ryu, Sung-Soo; Lim, Jung-Taik; Kim, Jin-Chun; Kim, Young Do; Moon, In-Hyung

CORPORATE SOURCE: Department of Materials Engineering, Hanyang University, Seoul, 133-791, S. Korea

SOURCE: Metals and Materials (Seoul) (1999), 5(2), 175-178 CODEN: MEMAFN; ISSN: 1225-9438

PUBLISHER: Korean Institute of Metals and Materials

DOCUMENT TYPE: Journal

LANGUAGE: English

AB W-30wt.%Cu powder prepd. by mech. alloying (MA) was annealed at various temps. to investigate the structural change of MA W-Cu powder. From differential scanning calorimeter anal. and transmission electron microscope observation, it was revealed that the recovery of W in MA W-30wt.%Cu powder occurred at 700.degree.C and the W grain started growing also at this temp. The W grain had grown significantly after annealing at 900.degree.C, and the Cu phase in the MA powder was found to act as liq. melt near 900.degree.C. The microstructure of the sintered specimen was similar to that of the W-Cu alloy via liq. phase sintering. This microstructure, even at temps. below Cu melting, was the new feature obsd. in the MA W-Cu powder. This suggests that such a microstructure is closely related to the inherent high diffusivity of the **nanosized** **W** crystallites as well as the liq.-like behavior of the Cu phase.

REFERENCE COUNT: 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 9 OF 12 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1998:86251 CAPLUS

DOCUMENT NUMBER: 128:175465

TITLE: Gas-sensing applications of **W**-Ti-O-based **nanosized** thin films prepared by r.f. reactive sputtering

AUTHOR(S): Ferroni, M.; Guidi, V.; Martinelli, G.; Nelli, P.; Sberveglieri, G.

CORPORATE SOURCE: Dep. of Physics and InFM, University of Ferrara, Ferrara, 44100, Italy

SOURCE: Sens. Actuators, B (1997), B44(1-3), 499-502
CODEN: SABCEB; ISSN: 0925-4005

PUBLISHER: Elsevier Science S.A.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Thin films were obtained by r.f. reactive sputtering from a Ti0.1-W0.9 target followed by heating in dry air. Their morphol. and structural characteristics were studied by electron-microscopy techniques. Annealing at 600.degree. of a sample leads to a WO3 polycryst. thin-film. A soln. of Ti ions in the WO3 lattice causes the film to have higher surface-to-vol. ratio and thereby higher gas-sensitivity with respect to pure WO3 sputtered thin films. This layer is highly sensitive to NO2 as concns. <1 ppm of NO2 are detected. Annealing the film at 800.degree. results in a TiO2-anatase nanostructured layer which is capable to detect few ppm of NO2 in dry air within the temp. range of 350-800.degree..

L5 ANSWER 10 OF 12 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1997:337193 CAPLUS

DOCUMENT NUMBER: 127:103564

TITLE: Gas-sensing applications of **W**-Ti-O-based **nanosized** thin films prepared by R.F. reactive sputtering

AUTHOR(S): Guidi, V.; Ferroni, M.; Martinelli, G.; Nelli, P.; Perego, C.; Sberveglieri, G.

CORPORATE SOURCE: Department of Physics, INFM, University of Ferrara, Ferrara, 44100, Italy

SOURCE: Conf. Proc. - Ital. Phys. Soc. (1997), 54(SAA '96, National Meeting on Sensors for Advanced Applications, 1996), 57-63
CODEN: CPISEN; ISSN: 1122-1437

PUBLISHER: Editrice Compositori

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Thin films were prepd. by r.f. reactive sputtering from a Ti.1-W.9 target over a monocryst. Si substrate. Thermal annealing in synthetic air-flow of the initial W-Ti-O deposited films results in layers with different

features, depending on the temp. at which annealing is being carried out. Morphol. and structural characteristics of the thin films were studied through microscopy techniques (SEM and TEM). After annealing at 600.degree., a WO3-tetragonal polycryst. thin film is achieved. This layer shows capability to detect concns. of NO2 <1 ppm. Annealing of the film at 800.degree. results in a nanosized structurally stable TiO2-anatase layer with very high surface-to-vol. ratio. This property causes the layer to be sensitive to few ppm of NO2 in dry air even at as high temp. as 800.degree.. The optimal performance of these sensing layers and their simple prepn. envisage an exploitation for environmental and exhaust-gas monitoring applications.

L5 ANSWER 11 OF 12 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1996:502688 CAPLUS
DOCUMENT NUMBER: 125:174363
TITLE: Preparation of Al2O3/Mo nanocomposite powder via chemical route and spray drying
AUTHOR(S): Lo, Ming-Hung; Cheng, Feng-Huei; Wei, Wen-Cheng
CORPORATE SOURCE: Inst. Materials Sci. Eng., National Taiwan Univ., Taipei, 106, Taiwan
SOURCE: J. Mater. Res. (1996), 11(8), 2020-2028
CODEN: JMREEE; ISSN: 0884-2914
DOCUMENT TYPE: Journal
LANGUAGE: English

AB A route to prep. nanometer-sized Mo particulates in Al2O3 was attempted by a combination of soln. reactions in mol. scale and forcing pptn. by a spray-drying technique. MoO3 was first dissolved in ammonia water and then added in the slurry with high purity, submicrometer Al2O3 powder. Mixed suspension was spray-dried, and then the dried granules were reduced by hydrogen gas and further hot-pressing to a bulky composite at various temps. Dissoln. of Mo oxide, adsorption reactions on the alumina surface, and surface potential of alumina particles in homogeneous ammonia suspension were studied. Characterization of the granules including compactability, flowing properties, surface morphol., grain growth of Mo and Al2O3, and mixing homogeneity, were examd. Homogeneity of the spray-dried granules was detd. by the calcn. of mixing index and the observation of the microstructure of the sintered body. The existence of intergranular, intragranular, and **nanosized Mo** particulates within Al2O3 grains was obsd. by transmission electron microscopy (TEM). All the evidence revealed that homogeneous composites with nanometer-sized Mo had been successfully prepd. by this attempt with the proposed chem. route and following the spray-drying process.

L5 ANSWER 12 OF 12 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1993:43364 CAPLUS
DOCUMENT NUMBER: 118:43364
TITLE: Synthesis and evaluation of nanophase tungsten-tungsten carbide composites
AUTHOR(S): Raghunathan, S.; Bourell, D. L.; Persad, C.
CORPORATE SOURCE: Cent. Mater. Sci. Eng., Univ. Texas, Austin, TX, 78712-1063, USA
SOURCE: Microcompos. Nanophase Mater., Proc. Symp. (1991), 81-96. Editor(s): Van Aken, David C.; Was, Gary S.; Ghosh, Amit K. Minet. Met. Mater. Soc.: Warrendale, Pa.
CODEN: 58HAAK
DOCUMENT TYPE: Conference
LANGUAGE: English

AB **Nanosized W** powders were produced by rapid redn. of com. cryst. tungstic acid and lab-synthesized tungstic acid gels. The redn. was performed in a H atm. at 1073 K. The effects of initial particle size and morphol., reducing temp., and time of redn. on the W

particle size and morphol. were studied. W powders with particle sizes of 50-100 nm were carburized in a methane/H atm. at various temps. and times to produce thin WC layers. These composites were consolidated using press and sinter techniques. X-ray diffraction and electron microscopy were used in structure evaluation. Microhardness and d. measurements were used in property evaluation.

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     (FILE 'HOME' ENTERED AT 11:04:27 ON 12 MAY 2002)

     FILE 'CAPLUS' ENTERED AT 11:04:36 ON 12 MAY 2002
L1            16 S NANOSIZED (4A) (CHROMIUM OR MOLYBDENUM OR TUNGESTEN)
L2            17 S NANOSIZED (4A) (CR OR MO OR W)
L3            14 S L2 NOT L1
L4             2 S L3 AND NANOPARTICL?
L5            12 S L3 NOT L4

=>  s nanoparticl? or nano-particl?
         16406 NANOPARTICL?
         12811 NANO
           127 NANOS
         12936 NANO
                 (NANO OR NANOS)
        908541 PARTICL?
           630 NANO-PARTICL?
                 (NANO(W)PARTICL?)
L6       16703 NANOPARTICL? OR NANO-PARTICL?

=> s l6 and (chromium or molybdenum or tungesten)
        271938 CHROMIUM
            75 CHROMIUMS
        271943 CHROMIUM
                 (CHROMIUM OR CHROMIUMS)
        174290 MOLYBDENUM
            34 MOLYBDENUMS
        174294 MOLYBDENUM
                 (MOLYBDENUM OR MOLYBDENUMS)
            12 TUNGESTEN
L7         365 L6 AND (CHROMIUM OR MOLYBDENUM OR TUNGESTEN)

=> s l7 and alcohol?
        274853 ALCOHOL?
        494961 ALC
        158405 ALCS
        577505 ALC
                 (ALC OR ALCS)
        673028 ALCOHOL?
                 (ALCOHOL? OR ALC)
L8          11 L7 AND ALCOHOL?

=> d l8 ibib ab 1-11

L8   ANSWER 1 OF 11  CAPLUS  COPYRIGHT 2002 ACS
ACCESSION NUMBER:         2002:87164  CAPLUS
DOCUMENT NUMBER:          136:137409
TITLE:                    Preparation of noble metal nanoparticles
                          suitable for electrode assemblies in low-temperature
                          fuel cells
INVENTOR(S):              Starz, Karl-Anton; Goia, Dan V.; Koehler, Joachim;
                          Baenisch, Volker
PATENT ASSIGNEE(S):       Omg A.-G. & Co. K.-G., Germany
SOURCE:                   Eur. Pat. Appl., 12 pp.
                          CODEN: EPXXDW
DOCUMENT TYPE:            Patent
LANGUAGE:                 English
FAMILY ACC. NUM. COUNT:   1
PATENT INFORMATION:

     PATENT NO.       KIND  DATE          APPLICATION NO.  DATE
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EP 1175948	A2	20020130	EP 2001-117494	20010720
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
DE 10037071	A1	20020221	DE 2000-10037071	20000729
US 2002034675	A1	20020321	US 2001-910959	20010724

PRIORITY APPLN. INFO.: DE 2000-10037071 A 20000729

AB The present invention provides **nanoparticles** which contain noble metals alone or noble metals in combination with base metals. The **nanoparticles** are characterized in that they are embedded in an aq. soln. of a temporary stabilizer based on a polysaccharide. The temporary stabilizer can be removed by pyrolysis at .ltoreq.250.degree. or by breaking the glycosidic bonds in the presence of acids or alkalies.

L8 ANSWER 2 OF 11 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 2001:763341 CAPLUS
DOCUMENT NUMBER: 135:312579
TITLE: Magnetically-responsive microspheres
INVENTOR(S): Chandler, Donald J.; Herren, Michael A.
PATENT ASSIGNEE(S): Luminex Corporation, USA
SOURCE: PCT Int. Appl., 16 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001078087	A2	20011018	WO 2001-US11122	20010406
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				

PRIORITY APPLN. INFO.: US 2000-194889P P 20000406

AB Microspheres are constructed using magnetic particles. Hybrid microspheres are constructed using fluorescent or luminescent microspheres and magnetic **nanoparticles**. Reactive moieties on the surface of the resultant particles can be used for attachment of biol. active mols., thus allowing selective sepns. and anal. assays to be performed. Distinguishable subsets of microspheres can be constructed based on fluorescent intensities, and sepns. can be affected based on variable degree of magnetic content.

L8 ANSWER 3 OF 11 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 2001:665923 CAPLUS
DOCUMENT NUMBER: 135:373797
TITLE: Influence of surfactants on the preparation of MoS2 **nanoparticles**
AUTHOR(S): Zeng, Ying-feng; Jiang, Xiao-ming; Chen, Yue-zhu
CORPORATE SOURCE: State Key Laboratory of Heavy Oil Processing, University of Petroleum, Beijing, 102200, Peop. Rep. China
SOURCE: Shiyou Xuebao, Shiyou Jiagong (2001), 17(4), 55-58
CODEN: SXSHEY; ISSN: 1001-8719
PUBLISHER: Zhongguo Shihua Chubanshe
DOCUMENT TYPE: Journal

LANGUAGE: Chinese

AB **Molybdenum** disulfide (MoS2) **nanoparticles** were prepd. by pptn. method at the presence of different surfactants, such as dialkyldithiophosphate (DDP), cetyl tri-Me ammonium chloride and polyvinyl **alc**. (PVA). The influence of surfactants on the size and appearance of prepd. MoS2 **nanoparticles** was investigated. The morphol. and structure of these prepd. particles were characterized by TEM and IR, etc. The results showed that MoS2 **nanoparticles** modified by cetyl tri-Me ammonium chloride were uniform, their diam. were around 100 nm, and showed some lipophilic characteristics.

L8 ANSWER 4 OF 11 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 2001:162547 CAPLUS
DOCUMENT NUMBER: 134:213262
TITLE: The role of XAFS in the in situ and ex situ elucidation of active sites in designed solid catalysts
AUTHOR(S): Thomas, John Meurig; Sankar, Gopinathan
CORPORATE SOURCE: Davy Faraday Research Laboratory, The Royal Institution of GB, London, W1S 4BS, UK
SOURCE: Journal of Synchrotron Radiation (2001), 8(2), 55-60
CODEN: JSYRES; ISSN: 0909-0495
PUBLISHER: Munksgaard International Publishers Ltd.
DOCUMENT TYPE: Journal; General Review
LANGUAGE: English

AB A review with many refs.; new mesoporous and microporous catalysts based on silica, aluminophosphates, or aluminophosphates contg. one or other of the heteroatoms Ti, Co, Mn, Fe and Cr, are ideally suited for study by X-ray absorption fine structure (XAFS). The information derived from X-ray absorption near-edge structure (XANES) and extended X-ray absorption fine structure (EXAFS) elucidates the nature of the catalytically active site, generally (but not invariably) under in situ conditions. This, in turn, provides new insights into the mechanism of the catalysis and suggests methods of improving the performance of the original catalyst. In this way, significant advances have recently been made in designing catalysts for the selective oxidn. of alkanes, for the epoxidn. of alkenes and for the dehydration of **alcs**. to yield olefins. Combined with d. functional theory (DFT) computations, XAFS studies have also yielded fresh insights into the architecture of **nanoparticle** catalysts, such as Ru12Cu4C2 supported on mesoporous silica.

REFERENCE COUNT: 48 THERE ARE 48 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 5 OF 11 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 2001:136980 CAPLUS
DOCUMENT NUMBER: 134:183283
TITLE: Hair dyes containing transition metal oxides
INVENTOR(S): Stephan, Hans-Oscar; Kleen, Astrid; Heller, Melita; Hoffkes, Horst
PATENT ASSIGNEE(S): Henkel Kommanditgesellschaft auf Aktien, Germany
SOURCE: PCT Int. Appl., 16 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001012143	A1	20010222	WO 2000-EP7656	20000808

W: AU, BR, CA, CN, CZ, HU, JP, NO, PL, RU, SK, US, VN
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL,

PT, SE
DE 10031993 A1 20010222 DE 2000-10031993 20000630
PRIORITY APPLN. INFO.: DE 1999-19938994 A 19990817
AB A method for oxidn. dyeing of keratin fibers, esp. human hair, using an aq. prepn. of oxidn. dye precursors. Said method is carried out in mild conditions i.e. at a neutral pH value or without the addn. of oxidants, whereby the prepn. is placed in contact with a water-insol., esp. fine-particled, transition metal compd., preferably an oxide of copper, cobalt, iron, manganese, **molybdenum**, vanadium or ruthenium, having a particle size of less than 1000 nm, preferably 10-1000 nm, either before or while said prepn. acts upon said keratin fibers. Thus Cu2O/CuO/Cu **nanoparticles** were prepd. electrolytically; the catalyst was suspended in glycerol. The cream base contained in wt./wt.%: Texapon NSO 20; Dehyton K 12.5; Lorol 2.0; Hydrenol D 8.5; Eumulgin B2 0.75. The compn. of the oxidative dye precursor was: cream base 50.0 g; 4-amino-2-aminomethyl phenol 7.5 mmol; 5-amino-2-methylphenol 7.5 mmol; sodium sulfite 1.0 g; ammonium sulfate 1.0 g; ammonia soln. to set pH9; ad water to 100 g. Hair dyeing expts. were carried out by using the dye precursor prepn. with various amts. of catalyst and with hydrogen peroxide.
REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 6 OF 11 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 2000:861627 CAPLUS
DOCUMENT NUMBER: 134:20609
TITLE: Manufacture of ceramic microstructures from polymer compositions containing ceramic **nanoparticles**
INVENTOR(S): Morales, Alfredo M.; Zhang, Z. John; Chinn, Douglas
PATENT ASSIGNEE(S): Sandia Corporation, USA
SOURCE: PCT Int. Appl., 36 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000073241	A1	20001207	WO 2000-US15370	20000602
W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
US 6245849	B1	20010612	US 1999-325003	19990602

PRIORITY APPLN. INFO.: US 1999-325003 A 19990602
AB A polymer compn. is prepd. from a thermally or chem. or photolytically curable polymer, and nanometer size (1-1000 nm) ceramic particles. A mold, such as a lithog. patterned mold, preferably a LIGA mold, is filled with the polymer compn. and the polymer is then cured (hardened). The elevated segments of the mold are then removed. The surface-attached ceramic microstructures may then be removed from the substrate and, if desired, pyrolyzed and sintered. The ceramic microstructures have applications in micro electromech. system fabrication, semiconductor processing, information storage, medical diagnostics, optics, materials science, and structural engineering.
REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS

RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 7 OF 11 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1999:523404 CAPLUS
DOCUMENT NUMBER: 131:247019
TITLE: A novel chemical route for the preparation of nanosized oxides, phosphates, vanadates, molybdates and tungstates using polymer precursors
AUTHOR(S): Pramanik, P.
CORPORATE SOURCE: Department of Chemistry, Indian Institute of Technology, Kharagpur, 721302, India
SOURCE: Bulletin of Materials Science (1999), 22(3), 335-339
CODEN: BUMSDW; ISSN: 0250-4707
PUBLISHER: Indian Academy of Sciences
DOCUMENT TYPE: Journal
LANGUAGE: English
AB A variety of nanosized (particle diam. ranging between 10-90 nm) ceramic oxide powders have been prepd. from a versatile, efficient and tech. simple polymer matrix based precursor soln. The precursor soln. constituted of the metal nitrates mixed with the polymer-PVA/PAA/carboxylated starch in presence of mono-/disaccharides or, polyhydroxy compd. Thermolysis/flame pyrolysis of the precursor mass at external temps. of around 300-500.degree.C resulted in the oxide phase.
REFERENCE COUNT: 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 8 OF 11 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1998:772301 CAPLUS
DOCUMENT NUMBER: 130:72002
TITLE: Synthesis and characterization of **molybdenum** based colloidal particles
AUTHOR(S): Moreno, Beatriz; Vidoni, Olivia; Ovalles, Cesar; Chaudret, Bruno; Urbina, Caribay; Krentzein, Heinz
CORPORATE SOURCE: INTEVEP, S.A., Caracas, 1070A, Venez.
SOURCE: Journal of Colloid and Interface Science (1998), 207(2), 251-257
CODEN: JCISA5; ISSN: 0021-9797
PUBLISHER: Academic Press
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The synthesis and characterization of **molybdenum** colloidal particles were evaluated using thermal and sonochem. methods and starting from different metal precursors, Mo(CO)6 and (NH4)2MoS4. The products were characterized by elemental anal., spectroscopic (UV, FTIR), and surface anal. (XPS) techniques, as well as by transmission electron microscopy (TEM) for detg. the particle sizes. Using Mo(CO)6 as metal source, particle sizes with an av. diam. of 1.5 nm can be obtained using tert-amyl **alc.** as solvent and tetrahydrothiophene as sulfurating ligand. The characterization of these particles showed that they are composed of **molybdenum** oxide MoO3. Using (NH4)2MoS4 as metal precursor, particles with av. diams. of 4.7 and 2.5 nm were synthesized using thermal and sonochem. methods, resp. The characterization of these particles showed them to be composed of **molybdenum** sulfide, MoS2. The sonochem. method proved to be the fastest and most convenient synthetic pathway of obtaining small colloidal particles at low temps. and with control of the av. size. (c) 1998 Academic Press.
REFERENCE COUNT: 24 THERE ARE 24 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 9 OF 11 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1998:388656 CAPLUS
DOCUMENT NUMBER: 129:69557

TITLE: Method for preparing metal-intercalated fullerene-like chalcogenides
INVENTOR(S): Homyonfer, Moshe; Tenne, Reshef; Feldman, Yishay
PATENT ASSIGNEE(S): Yeda Research and Development Co. Ltd., Israel; Homyonfer, Moshe; Tenne, Reshef; Feldman, Yishay
SOURCE: PCT Int. Appl., 43 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9823796	A1	19980604	WO 1997-IL390	19971127
W: BR, CA, CN, IL, JP, KR, RU, US				
RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
EP 948671	A1	19991013	EP 1997-946024	19971127
EP 948671	B1	20020220		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
CN 1245540	A	20000223	CN 1997-181571	19971127
BR 9713308	A	20000321	BR 1997-13308	19971127
JP 2001504794	T2	20010410	JP 1998-524485	19971127
AT 213511	E	20020315	AT 1997-946024	19971127
KR 2000057250	A	20000915	KR 1999-704631	19990526
US 6217843	B1	20010417	US 2000-308663	20000403

PRIORITY APPLN. INFO.: IL 1996-119719 A 19961129
WO 1997-IL390 W 19971127

AB The method for prepg. **nanoparticles** or nanowhiskers of a M2-doped M1 oxide (M1 is selected from In, Ga, Sn and a transition metal; M2 is any metal), comprises heating a M1 material with water vapor or in a vacuum app. at a base pressure of 10-3 to 10-5 Torr, or electron beam-evapg. the M1 material with water or with an O-contg. volatile solvent in a vacuum pressure at a base pressure of 10-5 to 10-6 Torr in the presence of a M2 salt, and recovering the M2-doped M1 oxide from the walls of the vacuum app. The method for prepg. M2-intercalated and/or M2-encaged inorg. fullerene-like (IF) structures (M1, M2 as above) comprises heating a M1 material with water vapor or in a vacuum app. at a base pressure of 10-3 to 10-5 Torr, or electron beam-evapg. the M1 material with water or with an O-contg. volatile solvent in a vacuum pressure at a base pressure of 10-5 to 10-6 Torr in the presence of a M2 salt, annealing the M2-doped M1 oxide in a reducing atm. with H2X gas (X = S, Se, or Te), and recovering the M2-intercalated and/or M2-encaged IF-like structures of the M1 chalcogenide. Preferably, the M2 salt is selected from alkali metal, alk. earth, and transition metal salts, esp. alkali metal chlorides. The intercalated and/or encaged IF structures are suitable for use as lubricants, and also form stable suspensions, e.g., in **alc**., and electrophoretic deposition from the suspensions on conductive substrates yields a thin film of intercalated IF-like material, e.g., as photosensitive element in solar cells, for manufg. batteries, in electrochromic devices, and as single-layer film on the tip of scanning probe microscopes. W wire was heated in steam to give WO3 that was reduced with H2S to give the sulfide that was intercalated with an alkali metal chloride to give the IF-like material.

L8 ANSWER 10 OF 11 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1997:315048 CAPLUS
DOCUMENT NUMBER: 126:297712
TITLE: Structured index optics and ophthalmic lenses for vision correction
INVENTOR(S): Toeppen, John S.

PATENT ASSIGNEE(S): Regents of the University of California, USA
SOURCE: PCT Int. Appl., 24 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9710527	A1	19970320	WO 1996-US14535	19960910

W: CA, JP, KR, MX, SG
RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE
PRIORITY APPLN. INFO.: US 1995-530395 19950914

AB An improved ophthalmic lens structure is described with macroscopically smooth exterior surface and internal optical structures created with the vol. of the lens. The material of which the lens is composed is optimally polymeric, nanoporous, and serves as a resin binder system to hold **nanoparticles** of mineral fillers having relatively high refractive indexes in relative positions to lower refractive index materials to produce optical power by the control of light through refractive and diffractive structures. These structures can be generated using various combinations of machining, molding, replication, optical exposure, and optical pattern generation techniques. These structures can be in the form of multiple laminated surface reliefs and/or vol. holog. structures having radial, cylindrical, or asym. geometries.

L8 ANSWER 11 OF 11 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1997:189977 CAPLUS
DOCUMENT NUMBER: 126:285231
TITLE: Intercalation of Inorganic Fullerene-like Structures Yields Photosensitive Films and New Tips for Scanning Probe Microscopy
AUTHOR(S): Homyonfer, M.; Alperson, B.; Rosenberg, Y.; Sapir, L.; Cohen, S. R.; Hodes, G.; Tenne, R.
CORPORATE SOURCE: Department of Materials and Interfaces, Weizmann Institute, Rehovot, 76100, Israel
SOURCE: J. Am. Chem. Soc. (1997), 119(11), 2693-2698
CODEN: JACSAT; ISSN: 0002-7863
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Evapn. of metals, like W, Mo, V, and In, in the presence of water vapor and subsequent sulfidization has yielded bulk quantities of nested fullerenes, nanotubes, and structures with neg. curvature (inorg. fullerene-like-IF). Dissolving alkali-metal salts into the water source afforded alkali-metal intercalation and staging (n = 6) of the IF structures after sulfidization. The intercalated moieties were found to be stable in air and even in water. The intercalated IF structures could be dispersed in **alc**. suspensions, and electrophoretic deposition from the suspensions yielded thin films of the IF particles. The films of intercalated IF showed respectable and time-invariant photo-effects. Furthermore, low adhesion and robust tips for scanning probe microscopy were prepd. by depositing intercalated IF film on Si tips. Other applications, which are currently investigated, are briefly mentioned.

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